



**SCOTTISH GOVERNMENT
ENERGY CONSENTS AND DEPLOYMENT UNIT**

SCOPING OPINION

LINFAIRN FARM WIND FARM

Contents

- 1. Introduction**
- 2. Aim Of This Scoping Opinion**
- 3. Land Use Planning**
- 4. Natural Heritage**
- 5. General Issues**
 - 5.1 Aviation**
 - 5.2 Economic Benefit**
 - 5.3 Local Planning Agreements**
- 6. Contents Of The Environmental Statement (ES)**
 - 6.1 Format**
 - 6.2 Non Technical Summary**
 - 6.3 Site Selection And Alternatives**
 - 6.4 Description Of The Development**
 - 6.5 Track Construction**
 - 6.6 Decommissioning**
 - 6.7 Grid Connection Details**
- 7. Baseline Assessment And Mitigation**
 - 7.1 Air And Climate Emissions**
 - 7.2 Carbon Emissions**
 - 7.3 Design, Landscape And The Built Environment**
 - 7.4 Construction And Operation**
- 8. Ecology, Biodiversity And Nature Conservation**
 - 8.1 Designated Sites**
 - 8.2 Habitats**
 - 8.3 Habitat Management**
 - 8.4 Species: Plants And Animals**
 - Plants**
 - Birds**
 - Mammals**
 - Reptiles And Amphibians**
 - Fish And Other Freshwater Aquatic Species**
 - Terrestrial And Aquatic Invertebrates**
 - 8.5 Archaeology And Cultural Heritage**
 - General Principles**
 - Baseline Information**
- 9. Water Environment**
 - 9.1 Hydrology And Hydrogeology**
 - 9.2 Geology And Soils**
 - 9.3 Assessment Of Peat Slide Risk**
 - 9.4 Forestry / Woodlands**
- 10. Other Material Issues**

- 10.1 Waste
 - 10.2 Telecommunications
 - 10.3 Noise
 - 10.4 Shadow Flicker
 - 10.5 Traffic Management
 - 10.6 Cumulative Impacts
 - 10.7 Other Planning Or Environmental Impact Issues Unique To The Application
11. General ES Issues
- 11.1 Consultation
 - 11.2 Gaelic Language
 - 11.3 OS Mapping Records
 - 11.4 Difficulties In Compiling Additional Information
 - 11.5 Application And Environmental Statement
 - 11.6 Consent Timescale And Application Quality
 - 11.7 Judicial Review

Annex 1

All Consultee comments relating specifically to Linfairn Farm Wind Farm

THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2000

SCOPING OPINION FOR THE PROPOSED LINFAIRN FARM WIND FARM, SOUTH OF STRAITON, SOUTH AYRSHIRE

1. Introduction

Any proposal to construct or operate a power generation scheme with a capacity in **excess of 50 megawatts** requires Scottish Ministers' consent under section 36 of the Electricity Act 1989.

Schedule 9 of the Act places on the developer a duty to "have regard to the desirability of preserving the natural beauty of the countryside, of conserving flora, fauna and geological and physiological features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest". In addition, the developer is required to give consideration to National Planning Framework 2, Scottish Planning Policy, Planning Advice Notes, the relevant planning authority's Development Plans and any relevant supplementary guidance.

Under the Electricity Works (Environmental Impact Assessment) (Scotland)(EIA) Regulations 2000, the Scottish Ministers are required to consider whether any proposal for a wind farm is likely to have a significant effect on the environment. In terms of these Regulations, we must consult the planning authority, Scottish Natural Heritage and the Scottish Environment Protection Agency and other relevant consultees.

2. Aim Of This Scoping Opinion

Scottish Ministers are obliged under the EIA regulations to respond to requests from developers for a scoping opinion on outline design proposals.

The purpose of this document is to provide advice and guidance to developers which has been collated from expert consultees whom the Scottish Government has consulted. It should provide clear advice from consultees and enable developers to address the issues they have identified and address these in the EIA process and the Environmental Statement associated with the application for section 36 consent.

3. Land Use Planning

The Scottish Government's planning policies are set out in the National Planning Framework, Scottish Planning Policy, Designing Places and Circulars.

The National Planning Framework is the Scottish Government's Strategy for Scotland's long term spatial development.

Scottish Planning Policy (SPP) is a statement of Scottish Government policy on land use planning and contains:

- The Scottish Government's view of the purpose of planning,
- The core principles for the operation of the system and the objectives for key parts of the system,
- Statutory guidance on sustainable development and planning under Section 3E of the Planning etc. (Scotland) Act 2006,
- Concise subject planning policies, including the implications for development planning and development management, and
- The Scottish Government's expectations of the intended outcomes of the planning system.

Other land use planning documents which may be relevant to this proposal can be found at the following link:

<http://www.scotland.gov.uk/Topics/Built-Environment/planning>

The ES should also include full reference to the relevant development plan.

4. Natural Heritage

Scottish Natural Heritage (SNH) has produced a service level statement (SLS) for renewable energy consultation. This statement provides information regarding the level of input that can be expected from SNH at various stages of the EIA process. Annex A of the SLS details a list of references, which should be fully considered as part of the EIA process. A copy of the SLS and other vital information can be found on the renewable energy section of their website – <http://www.snh.org.uk>.

5. General Issues

5.1 Aviation

In the wake of recent consultation with the aviation organisations such as NATS, BAA, CAA, MOD etc, it is clear that large scale wind farm proposals can impact significantly on primary, secondary or weather radar stations and thus affect operational safety. Developers are encouraged to engage with these organisations and airport operators at an early stage in the design process, to establish the potential impacts and agree acceptable technical solutions. Where actual or potential conflicts exist, it is important that a solution is identified and that the relevant consultee agrees to that solution being realised within a suitable timescale.

A link to relevant aviation guidance is available at the following website link, however it should be noted that this guidance is being reviewed; <http://www.berr.gov.uk/files/file17828.pdf>

NATS En Route Plc (“NERL”) is responsible for the safe and expeditious movement in the en-route phase of flight for aircraft operating in controlled airspace in the UK. To undertake this responsibility NERL has a comprehensive infrastructure of radars, communication systems and navigational aids throughout the UK, all of which could be compromised by the establishment of a wind farm. In this respect NERL is responsible for safeguarding this infrastructure to ensure its integrity to provide the required services to Air Traffic Control (ATC). In order to discharge this responsibility NERL assess the potential impact of every wind farm development in the UK which have applied for planning approval.

NERL offer services to assist in pre-planning for wind farm developments. Details of these services are available on <http://www.bwea.com/aviation/nats.html> or by contacting NERL directly on NATSSafeguarding@nats.co.uk or writing to:

NERL Safeguarding – Mailbox 27
NATS - CTC
4000 Parkway
Solent Business Park
Whiteley
Hampshire
PO15 7FL

NATS are unable to evaluate the proposal until the ground to blade tip height and OS Grid Reference for each individual wind turbine (eastings and northings) is received.

The Wind Energy Team at Defence Estates is the focal point for all wind farm proposals in MOD. The team seeks to work with industry at the earliest stages of proposed development to minimise the impact on Defence, to ensure public safety is not compromised, and maximise the likelihood of planning success. Each pre-planning proposal is assessed on a case by case basis by up to 10 technical advisors. Some of the main concerns the MOD has are interference with Air Defence Radar and Air Traffic Control Radar, plus the creation of obstacles in Low Flying Areas, which negate the usefulness of the training undertaken there. Aviation safety lighting should also be considered through consultation with the aviation authorities and the relevant planning authority.

The pre-planning consultation form traditionally found at annex E of the Wind Energy and Aviation Interests – Interim Guidelines should be completed and e-mailed to Defence Estates at modwindsystems@de.mod.uk.

Civil Aviation Authority Directorate of Airspace Policy (DAP) is the civil aviation regulatory focal point for all wind farm proposals. DAP seeks to work with industry at the earliest stages of proposed development to establish potential civil aviation issues associated with any particular wind turbine proposal. The best means by which to initiate the aviation related consultation process is via the **completion and submission of an associated aviation pre-planning proforma** in line with the process described within the DTI/BERR guidance document ‘Wind Energy and Aviation Interests – Interim

Guidelines'. Generic CAA policy and guidance on wind turbines is set out within Civil Air Publication 764, available at <http://www.caa.co.uk/docs/33/Cap764.pdf>.

Furthermore, developers should demonstrate that a solution to potential aviation issues is either agreed or well advanced, **prior to** submission of the application.

5.2 Economic Benefit

The Government Economic Strategy (2011) establishes a new Strategic Priority – Transition to a Low Carbon Economy – to reflect the excellent opportunity we have to secure investment and jobs from this growing sector and ensure that the benefits of this transformational change are shared across the economy and our communities. The concept of economic benefit as a material consideration is explicitly confirmed in the SPP. Further details of the Government's approach to realising its ambitions for renewables are set out in the "2020 Routemap for Renewable Energy in Scotland", which highlights the manufacturing potential of the renewables sector and opportunities for communities to share in the rewards of our next energy revolution.

The application should include relevant economic information connected with the project, including the potential number of jobs, and economic activity associated with the procurement, construction operation and decommissioning of the development.

5.3 Local Planning Agreements

There are two main tests in determining whether a consideration is material and relevant. These are:

- it should serve or be related to the purpose of planning – it should therefore relate to the development and use of land; and
- it should fairly and reasonably relate to the particular application.

Only those issues that meet the above tests can be taken into account when considering applications. Where relevant, developers should identify such issues in their application, including evidence to support compliance with these tests.

6. **Contents Of The Environmental Statement (ES)**

We recommend the contents of the ES should be structured as follows below:

6.1 Format

High resolution and low resolution PDF versions should be provided. A description of the methodology used in assessing all impacts should be included.

It is considered good practice to set out within the ES the qualifications and experience of all those involved in collating, assessing or presenting technical information

6.2 Non Technical Summary

This should be written in simple non-technical terms to describe the various options for the proposed development and the mitigation measures against the potential adverse impacts which could result.

6.3 Site Selection And Alternatives

The applicant should set out the alternatives sites considered and the rationale and methods used to select the chosen site. The applicant should demonstrate that a fairly wide set of environmental and economic parameters have been used to narrow down choice of sites and how this choice takes account of the spatial framework set out in the SPP. Secondly, there should be a detailed examination on these parameters to minimise the impact of the proposal by sensitive design and layout.

Wind potential and access to the grid are key to initial sieve-mapping exercises for site selection, but environmental constraints other than landscape character should also be included in this initial site selection process. For example, areas of deep peat, watercourse crossings, wetlands and locations of protected species would be other examples of additional environmental constraints to be considered both from the outset and in the detailed design and layout.

Architecture+Design Scotland (A+DS) suggest that a planning and design strategy should first look at the proposed location and address whether this is a sensible location in relation to wind, access to the grid and to the character of the landscape.

6.4 Description Of The Development

Your description of the proposed development in the Environmental Statement should comprise information on the site boundary, design layout, and scale of the development.

Where it is required to assess environmental effects of the development (see EIA regulation 4 (1)(b), the Environmental Statement should include;

- (a) a description of the physical characteristics of the whole development and the land use requirements during the construction, operation, decommissioning and restoration phases;
- (b) a description of the main characteristics of the production processes and nature and quality of the materials used; and
- (c) an estimate by type and quantity of expected residues and emissions resulting from the operation of the proposed development.

6.5 Track Construction

The applicant should set out the alternative access routes considered and the rationale and methods used to select the chosen access routes. Applicants should set out the intended use of access routes i.e.: for transportation of turbine components, delivery of construction materials , every day operational use etc. Developers should specify which access routes/ roads are temporary and which are required for the operational duration of the development. Considered design details will be required for all aspects of site work that might have an impact upon the environment, containing further preventative action and mitigation to limit impacts.

You should be aware of useful guidance on, *inter alia*, minimising the impact from construction of the type of access roads used in wind farms. Such guidance can be found in “Forests and Water Guidelines” Fifth Edition (2011) which can be obtained from the Forestry Commission via <http://www.forestry.gov.uk/forestry/infid-8bvgx9> and “Control of water pollution from linear construction projects” (CIRIA C648, 2006) which can be obtained from CIRIA. However, given that tracks in some cases will be located on peat and will carry very heavy loads, evidence will be necessary of additional consideration of specific measures required in similar schemes elsewhere to deliver best practice. Additional guidance is also available in ‘Constructed tracks in the Scottish Uplands’ (2006) published by SNH and available at <http://www.snh.org.uk/pdfs/publications/heritagemanagement/constructedtracks.pdf>

6.6 Decommissioning

The subsequent application and supporting environmental statement should include a programme of work complete with outline plans and specifications for the decommissioning and reinstatement of the site. Information should be provided on the anticipated working life of the development and after use site reinstatement.

6.7 Grid Connection Details

The impacts of constructing, installing and operating the following infrastructure components should be considered and assessed by developers, if known;

- Substation.
- Cabling (Underground).
- Cabling (Overhead).
- Monitoring and control centre.

7. **Baseline Assessment And Mitigation**

This section should clearly set out a description of the environmental features of the proposed wind farm site, the likely impacts of the wind farm on these features, and the measures envisaged to prevent, mitigate and where possible remedy or offset any significant effects on the environment. It should incorporate details of the arrangements and the methodologies to be used in monitoring such potential impacts, including arrangements for parallel monitoring of control sites, timing and arrangements for reporting the monitoring results. It should be noted that there is a danger that these measures could themselves have secondary or indirect impacts on the environment.

7.1 Air And Climate Emissions

The Environmental Statement should fully describe the likely significant effects of the development on the environment, including direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary e.g. construction related impacts, positive and negative effects of the development which result from:

- (a) the existence of the development.
- (b) the use of natural resources.
- (c) the emission of pollutants, the creation of nuisances and the elimination of waste.

7.2 Carbon Emissions

To assist Scottish Ministers in making a determination on the application, developers are invited to produce a statement of expected carbon savings over the lifetime of the wind farm. The statement should include an assessment of the carbon emissions associated with track preparation, foundations, steel, and transport; any carbon losses from tree felling (and offsetting from tree planting); and any carbon losses from loss or degradation of peaty soils. Reference can be made to the Scottish Government technical note "Calculating Potential Carbon Losses and Savings from Wind Farms on Scottish Peatlands" (2011).

It is also important to ensure that the carbon balance of renewable energy projects is not adversely affected by management of peat resource. There need to be measures in place to ensure that the development does not lead to significant drying or oxidation of peat through, for example, development of access tracks and other infrastructure, drainage channels, or "landscaping" of excavated peat. The basis for these measures should be set out within the ES, on which a detailed peat management scheme, required through planning condition, can subsequently be designed to ensure that the carbon balance benefits of the scheme are maximised.

Developers are required to submit full details of the potential carbon losses and savings of the wind farm. Guidance along with the above technical note, supporting research and spreadsheet tools is available from the Scottish Government website at <http://www.scotland.gov.uk/WindFarmsAndCarbon>. The ES should include printed copies of all worksheets along with an

explanation of how the data entered is derived, referring to the relevant section of the ES as appropriate. An electronic version of the spreadsheet should be emailed to econsentsadmin@scotland.gsi.gov.uk and SEPA.

Under each section below developers are asked to consider:

- Aspects of the environment likely to be affected by the proposals.
- Environmental impacts of the proposals.
- Methods to offset adverse environmental effects.
- Effects of the phases of the development; Construction, Operation, Decommissioning and Restoration.

7.3 Design, Landscape And The Built Environment

Scottish Ministers place particular importance on the layout design of wind farms and considers there is a need for a coherent, structured and quality driven approach to wind farm development. The appearance of wind farms is of particular interest and the need for a coherent design strategy to be considered at scoping stage and to be prepared before submission of the Environmental Statement. The strategy should explain the design principles behind the layout plan in a rational way that can be easily understood. The design strategy for the wind farm should be expressed through a design statement. The Design Statement should describe a clear strategy for meeting these objectives, a justification for the resulting layout and evidence that the design ideas have been tested against the objectives.

Wind farms are prominent features in the landscape and hence a full assessment of the effects on landscape and visual amenity is important. The assessment methodology should follow the approach promoted by the Landscape Institute and Institute of Environmental Management and Assessment ('Guidelines for Landscape and Visual Impact Assessment', second edition, Spon 2002). General guidance on the range of issues to be considered in assessment of wind farms is set out, in the form of a scoping checklist, at Appendix 1 of 'Hydroelectric schemes and the natural heritage (SNH 2010)

As regards the portrayal of visual and landscape impacts within Environmental Statements, guidance has also been developed, jointly by SNH and the Scottish Renewables Forum, on 'Visual Representation of Wind Farms – Good Practice Guidance' (SNH 2007), published at:

<http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind>.

Visual information should be presented in a way which communicates as realistically as possible the actual visual impact of the proposal. The format of the images and the focal length of the lens will have to be taken into consideration.

All visualisation images should be accompanied by a description of how to view the image so that it best replicates what will be seen if the proposal is constructed. This should include the required viewing distance between the

eye and the image, and whether it is a single frame image or a composite panoramic image. If a composite image, it is desirable either to curve the edges of panoramic images so that peripheral parts of the image are viewed at the same intended viewing distance, or to 'pan' across the image with the eye remaining at the recommended viewing distance. This is not required for single frame images.

The viewpoints from which the photographs are taken should be agreed with the planning authority and SNH. The horizontal field of view should be shown on a map so that the images can be used accurately on site.

The ES should include a description of the landscape character of the area and how that character will be affected by the impact on any landscapes designated for their landscape or scenic value, including National Parks, National Scenic Areas, or local landscape designations such as Area of Great Landscape Value or Regional Scenic Area (the terminology is varied) and the impact on any area which is a recognised focus for recreational enjoyment of the countryside, eg a Regional Park or Country Park.

7.4 Construction And Operation

The ES should contain site-specific information on all aspects of site work that might have an impact upon the environment, containing further preventative action and mitigation to limit impacts. Elements should include: fuel transport and storage management; concrete production (including if batching plants are proposed and measures to prevent discharges to watercourses); stockpile storage; storage of weather sensitive materials at lay-down areas; haul routes and access roads (and if temporary or permanent); earthworks to provide landscaping; mechanical digging of new or existing drainage channels; vehicle access over watercourses; construction of watercourse crossings and digging of excavations (particularly regarding management of water ingress); temporary and long-term welfare arrangements for workers during construction ; maintenance of vehicles and plant; pollution control measures during turbine gearbox oil changes; bunding or roofing of transformer areas; use of oil-cooled power cables and related contingency measures; and dewatering of turbine base excavations. With regards to oil, it is imperative that there is a detailed contingency plan to deal with large oil spills that cannot be dealt with at a local level. The ES should identify if there are particularly sensitive receptors of pollution (e.g. salmonid rivers, rivers with freshwater pearl mussels etc.).

Such information is necessary in order to assess the environmental impact of the proposals prior to determination and provide the basis for more detailed construction method statements which may be requested as planning conditions (it is recommended that the relevant Planning Authorities, SNH and SEPA are provided with the opportunity to view these method statements in draft form, prior to them being finalised should development take place).

The applicant should be aware of information provided by SEPA that may be of use such as rainfall and hydrological data. The need to plan the works in order to avoid construction of roads, dewatering of pits and other potentially polluting activities during periods of high rainfall is important. The ES needs

to demonstrate which periods of the year would be best practice for construction for the site, taking into account the need to avoid pollution risks and other environmental sensitivities affecting operational timing, such as fish spawning and bird nesting.

The impact of the proposed development on public footpaths and rights of way should be clearly indicated. If any re-routing of paths under a Right of Way is required alternative routes should be highlighted for consideration. Further guidance can also be found within the Scottish Outdoor Access Code at <http://www.outdooraccess-scotland.com>.

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

The process whereby a method statement is consulted upon before commencement of work is satisfactory at many sites where sensitivities are non-critical. However for environmentally sensitive sites it is recommend that, following consultation, method statements be approved by the planning authority in consultation with SNH, prior to the commencement of construction work.

Scottish Natural Heritage would normally only wish to comment on Construction Method Statements where there are relevant and significant natural heritage interests involved. Developers should avoid submitting multiple versions of the Construction Method Statement to SNH.

8. Ecology, Biodiversity And Nature Conservation

Scottish Government suggests that all ecological survey methods conform to the best available standard methods for each habitat and species, and follow guidance published by SNH where this is available. Where standard methodologies do not exist, developers should propose and agree an appropriate methodology with SNH specialist advisers. SG also requires that all ecological survey data collected during ES survey work should be made available by the applicant to SG and SNH, in a form which would enable them to make future analysis of the effects of wind farms if appropriate.

8.1 Designated Sites

The ES should address the likely impacts on the nature conservation interests of all the designated sites in the vicinity of the proposed development. It should provide proposals for any mitigation that is required to avoid these

impacts or to reduce them to a level where they are not significant. Information on designated sites and the law protecting them can be found on the SNH website. Maps of the boundaries of all natural heritage designated sites and information on what they are designated for are also publicly available via SiteLink in the SNHi section of the SNH website <http://www.snh.org.uk/snhi/>. The developer is referred to this resource to ensure that they have the correct information on designated sites within the locality that may be affected by the proposed development. The potential impact of the development proposals on other designated areas such as NSA, LSA, SSI or Regional/National Parks etc should be carefully and thoroughly considered and appropriate mitigation measures outlined in the ES. Early consultation and agreement with SNH, the relevant planning authority and other stakeholders is imperative in these circumstances.

For developments with a potential to affect Natura sites, applicants must provide in the ES sufficient information to make clear how the tests in the Habitats Regulations will be met, as described in the June 2000 Scottish Government guidance. The information in the ES should enable the assessments required by the legislation to be completed by the Scottish Government. Specific guidance on the Habitats and Birds Directive regarding the appropriate impact assessments and associated alternative solution and IROPI tests is available on the following website link <http://www.scotland.gov.uk/library3/nature/habd-00.asp>

Within the Regulations, the first test is whether the proposal is necessary for the management of the site: this will not be the case for wind farm applications. The next step is to ask whether the proposal (alone or in combination with other proposals) is likely to have a significant effect on the site. If so, the Scottish Government as the Competent Authority under the Habitats Directive will draw up an 'appropriate assessment' as to the implications of the development for the site, in view of that site's conservation objectives.

The scoping report should aim to present sufficient information to enable a conclusion to be drawn on this test, i.e. as to whether there is likely to be a significant effect on the site. If that information is provided, SNH will be able to advise, when consulted upon the scoping request, whether an appropriate assessment will be necessary. In the event that detailed survey or analysis is required in order to reach a view, the survey and analysis should be regarded as information contributing to that assessment. Note that such information should be provided for the wind farm itself together with any ancillary works such as grid connections and vehicle tracks, and cumulatively in combination with any other wind farm consented or formally proposed in the vicinity.

8.2 Habitats

Surveys should be carried out at appropriate times or periods of the year by appropriately qualified and experienced personnel, and suitability of the timing needs to be considered within the ES.

The ES should provide a comprehensive account of the habitats present on the proposed development site. It should identify rare and threatened

habitats, and those protected by European or UK legislation, or identified in national or local Biodiversity Action Plans. Habitat enhancement and mitigation measures should be detailed, particularly in respect to blanket bog, in the contexts of both biodiversity conservation and the inherent risk of peat slide. Details of any habitat enhancement programme (such as native- tree planting, stock exclusion, etc) for the proposed wind farm site should be provided. It is expected that the ES will address whether or not the development could assist or impede delivery of elements of relevant Biodiversity Action Plans.

Particular attention should be paid to the effects of the proposals on any priority habitats, as listed in Annex 1 of the EU Habitats Directive, on the site. SEPA emphasises that the ES should demonstrate that turbine locations have been determined on the basis of habitats on the site, especially with regard to any areas of deep peat and intact hydrological units of mire vegetation. Turbines therefore need to be located in the light of vegetation survey work. Similarly, the ES needs to demonstrate that roads have been located to minimise impact on vegetation communities, peat habitats and peat depth. Measures to avoid pH impact on peatland from use of cement/concrete (e.g. use of blinding cement on roadways, wash-out during construction, integrity of shuttering) should be set out.

8.3 Habitat Management

SNH and RSPB may wish to see a Habitat Management Plan for the area of the wind farm and any area managed in mitigation or compensation for the potential impacts of the wind farm. A commitment to maintain and/or enhance the biodiversity of the overall area is expected. Monitoring of any specific potential impacts of the development, and of the outcome of any habitat management measures, should form part of the ES proposals. Developers may also want to consult other interested parties in preparation of the HMP information or relevant studies/surveys.

The ES should also outline provisions made regarding public access, having regard for the requirements of the Land Reform (Scotland) Act 2003 and the Scottish Outdoor Access Code at <http://www.outdooraccess-scotland.com>, clarifying the extent of any access restrictions proposed, if any, during construction or operation, and indicating any new facilities for access to be provided on or off site.

8.4 Species: Plants And Animals

The ES needs to show that the applicants have taken account of the relevant wildlife legislation and guidance, for example but not limited to, Council Directives on The Conservation of Natural Habitats and of Wild Flora and Fauna, and on Conservation of Wild Birds (commonly known as the Habitats and Birds Directives), the Wildlife & Countryside Act 1981, the Nature Conservation (Scotland) Act 2004, the Protection of Badgers Act 1992, the 1994 Conservation Regulations, Scottish Government Interim Guidance on European Protected Species, Development Sites and the Planning System and the Scottish Biodiversity Strategy and associated Implementation Plans. In terms of the SG Interim Guidance, applicants must give serious

consideration to/recognition of meeting the three fundamental tests set out in this Guidance. **It may be worthwhile for applicants to give consideration to this immediately after the completion of the scoping exercise.**

It needs to be categorically established which species are present on the site, and where, before the application is considered for consent. The presence of legally protected species and habitats, for example bird species listed in Annex 1 of the EU Birds Directive, Schedules 5 (animals) and 8 (plants) of the Wildlife & Countryside Act 1981, (as amended in Scotland), must be included and considered as part of the application process, not as an issue which can be considered at a later stage. Any consent given without due consideration to these species may breach European Directives with the possibility of consequential delays or the project being halted by the EC. Likewise the presence of species on Schedules 5 (animals) and 8 (plants) of the Wildlife & Countryside Act 1981 should be considered where there is a potential need for a licence under Section 16 of that Act.

Plants

A baseline survey of the plants present on the site should be undertaken, and field and existing data on the location of plants should be used to determine the presence of any rare or threatened species of vascular and no-vascular plants and fungi.

Birds

The ES should provide an assessment of the impact of the wind farm on birds. The assessment should follow the available guidance on the SNH website at <http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/>. A baseline survey of the species and number of birds present on the site throughout the year should be undertaken. Particular attention should be paid to specially protected and/or vulnerable species. All ornithological survey work should conform to the SNH guidance at the above link..

Survey work should include assessments of the flight lines of breeding birds and birds whose migrations or other seasonal distributions traverse or are in close proximity to the site. Collision risk analyses will be necessary for species which regularly pass through the site at any time of year. The analysis should follow the principles set out in the SNH guidance at the above link.

In the interests of all stakeholders involved in the consultation exercise, the presence of protected species must be included and considered as part of the section 36 application process. Submitting this information as an addendum at a later date will require further publicity and consultation which will delay the overall determination.

An Annex of Environmentally Sensitive Information may be required to provide information on nest locations or other environmentally sensitive information related to specially protected species, the information should follow the principles set out in the

SNH guidance “Environmental Statements and Annexes of Environmentally Sensitive Bird Information” (September 2009) at <http://www.snh.gov.uk/docs/A285693.pdf>. However, the annex should not include any information that is not confidential, or if it does this information should be contained elsewhere within the text of the environmental statement.

Mammals

A baseline survey of the species and number of mammals present on the site should be undertaken. Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected Mammals. Consideration should also be given to indirect impacts on species outwith the site.

Reptiles And Amphibians

A baseline survey of the species and number of reptiles and amphibians present on the site should be undertaken. Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected species, and those potentially affected by the development.

Fish And Other Freshwater Aquatic Species

Fish populations and other freshwater aquatic species can be impacted by subtle changes in water quality and quantity and changes in channel morphology that influence suitability of habitat and consequently performance and production. Further impacts can occur if issues of habitat continuity are not adequately considered when planning site drainage and river crossings. A baseline survey should be undertaken to demonstrate the species and abundance of fish present in the still and running water bodies on and around the site throughout the year. This should extend to watercourses which may be affected by run-off from the site during construction, operation or decommissioning.

Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected species, and those potentially affected by the development. However, fish and fisheries should be given due consideration regardless of conservation designation.

Developers should be aware that wind farm developments have considerable construction implications which should not be conducted without proper regard or understanding of their potential impacts on watercourses and water quality, and on fish and aquatic invertebrate populations.

The developer should ensure that the implications of changing water quality, quantity, channel morphology and habitat continuity are addressed specifically with reference to potential impacts on fish and that mitigation addresses these issues. Where this information is provided elsewhere in the document, it should be specifically highlighted.

Where a development has the potential to impact on local fish populations the developer will be asked to develop an integrated fish and water quality monitoring programme with baseline, development and post-development sampling. Details of any proposed monitoring should be detailed.

Developers are encouraged to submit fish information in a collective document or with the relevant cross references to other areas of the ES. (i.e. hydrology, hydro-geology, water quality and hydro-morphology)

Terrestrial And Aquatic Invertebrates

A baseline survey of invertebrates present on the site and in the water bodies and watercourses on and around the site throughout the year should be undertaken. This should be guided by existing information on the presence, distribution and abundance of notable invertebrates. Sampling of aquatic invertebrates should extend to watercourses which may be affected by run-off from the site during construction, operation or decommissioning. Particular attention should be paid to specially protected and/or vulnerable species, especially European Protected species, and those potentially affected by the development.

8.5 Archaeology And Cultural Heritage

General Principles

The ES should address the predicted impacts on the historic environment and describe the mitigation proposed to avoid or reduce impacts to a level where they are not significant. Historic environment issues should be taken into consideration from the start of the site selection process and as part of the alternatives considered.

National policy for the historic environment is set out in:

- Scottish Planning Policy *Planning and the Historic Environment at:* <http://www.scotland.gov.uk/topics/built-environment/planning/National-planning-policy/themes/historic>
- The Scottish Historic Environment Policy (SHEP) sets out Scottish Ministers strategic policies for the historic environment and can be found at: <http://www.historic-scotland.gov.uk/index/heritage/policy/shep.htm>

Amongst other things, SPP paragraph 110–112, Historic Environment, stresses that scheduled monuments should be preserved *in situ* and within an appropriate setting and confirms that developments must be managed carefully to preserve listed buildings and their settings to retain and enhance any features of special architectural or historic interest which they possess. Consequently, both direct impacts on the resource itself and indirect impact on its setting must be addressed in any Environmental Impact Assessment (EIA) undertaken for this proposed development. Further information on setting can be found in the following document: Managing Change in the Historic Environment <http://www.historic-scotland.gov.uk/managing-change-consultation-setting.pdf>.

Historic Scotland recommend that you engage a suitably qualified archaeological/historic environment consultants to advise on, and undertake the detailed assessment of impacts on the historic environment and advise on appropriate mitigation strategies.

Baseline Information

Information on the location of all archaeological/historic sites held in the National Monuments Record of Scotland, including the locations and, where appropriate, the extent of scheduled monuments, listed buildings and gardens and designed landscapes can be obtained from <http://www.pastmap.org.uk>.

Data on scheduled monuments, listed buildings and properties in the care of Scottish Ministers can also be downloaded from Historic Scotland's Spatial Data Warehouse at <http://data.historic-scotland.gov.uk>. For any further information on those data sets and for spatial information on gardens and designed landscapes and World Heritage Sites which are not currently included in Historic Scotland's Spatial Data Warehouse please contact hsgimanager@scotland.gsi.gov.uk. Historic Scotland would also be happy to provide any further information on all such sites.

9. Water Environment

Developers are strongly advised at an early stage to consult Scottish Environment Protection Agency (SEPA) as the regulatory body responsible for the implementation of the Controlled Activities (Scotland) Regulations 2005 (CAR), to identify 1) if a CAR license is necessary and 2) clarify the extent of the information required by SEPA to fully assess any license application. Energy Consents will identify a requirement for flood prevention comments from SEPA.

All applications (including those made prior to 1 April 2006) made to Scottish Ministers for consent under section 36 of the Electricity Act 1989 to construct and operate a electricity generating scheme will require to comply with CAR . In this regard, we will be advised by SEPA concerning the requirements of these Regulations on the proposed development and will have regard to this advice in considering any consent under section 36 of the Electricity Act 1989.

SEPA produces a series of Pollution Prevention Guidelines, several of which should be usefully utilised in preparation of an ES and during development. These include SEPA's guidance note PPG6: Working at Construction and Demolition Sites, PPG5: Works in, near or liable to affect Watercourses, PPG2 Above ground storage tanks, and others, all of which are available on SEPA's website at:

http://www.sepa.org.uk/about_us/publications/guidance/ppgs.aspx

SEPA would look to see specific principles contained within PPG notes to be incorporated within mitigation measures identified within the ES rather than general reference to adherence to the notes.

Prevention and clean-up measures should also be considered for each of the following stages of the development;

- Construction.
- Operational.
- Decommissioning.

Construction contractors are often unaware of the potential for impacts such as these but, when proper consultation with the local District Salmon Fishery Board (who have a statutory responsibility to protect salmon stocks) and Fishery Trust is encouraged at an early stage, many of these problems can be averted or overcome.

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

The ES should identify location of and protective/mitigation measures in relation to all private water supplies within the catchments impacted by the scheme, including modifications to site design and layout.

Developers should also be aware of available CIRIA guidance on the control of water pollution from construction sites and environmental good practice (<http://www.ciria.org>). Design guidance is also available on river crossings and migratory fish (SE consultation paper, 2000) at <http://www.scotland.gov.uk/consultations/transport/rcmf-00.asp>.

9.1 Hydrology And Hydrogeology

The ES should contain detailed statements of the nature of the hydrology and hydrogeology of the site, and of the potential effects the development on these. Developers should be aware that wind farm developments will have considerable construction implications and these should not be conducted without proper regard or understanding of the potential impacts on hydrology, water courses, water quality, water quantity and on aquatic flora and fauna. The assessment should include statements on the effects of the proposed development at all stages on;

- Hydrology
- Water Quality and quantity
- Flood Risk

The high rainfall often experienced at proposed wind farm sites means that run-off, high flow in watercourses, and other hydrological and hydrogeological matters require proper consideration within the ES.

Hydrological and hydrogeological issues should be addressed within the ES, and the following hydrological baseline information should be included.

- Long term average monthly rainfall figures.

Where the project includes significant watercourse engineering works, then SEPA would expect the following information to be included within the ES for at least a typical watercourse within the development area:

- Flood flow statistics - the flows for the Mean Annual Flood, 1:100 and 1:200 year return period.
- From a flow duration curve, the mean daily flow and Q95 flow.
- Methods used to calculate these must be identified; if non-standard methods are used, these should be described in detail with rationale for use.

Impacts on watercourses, lochs, groundwater, other water features and sensitive receptors, such as water supplies, need to be assessed. Measures to prevent erosion, sedimentation or discolouration will be required, along with monitoring proposals and contingency plans.

The applicant should refer to SEPA policy on groundwater which can be found at: <http://www.sepa.org.uk/planning/groundwater.aspx> which will assist in identifying potential risks. It should also be noted that 1:625000 groundwater vulnerability map of Scotland often referred to in Environmental Statements has been superseded by the digital groundwater vulnerability map of Scotland (2003) and the digital aquifer map of Scotland (2004) and it is the information used on these newer maps, available on request from SEPA, that should be used in any assessment.

If culverting should be proposed, either in relation to new or upgraded tracks, then it should be noted that SEPA has a policy against unnecessary culverting of watercourses. **Schemes should be designed to avoid by preference crossing watercourses, and to bridge watercourses which cannot be avoided. Culverting is the least desirable option.**

The ES must identify all water crossings and include a systematic table of watercourse crossings or channelising, with detailed justification for any such elements and design to minimise impact. The table should be accompanied by photography of each watercourse affected and include dimensions of the watercourse. It may be useful for the applicant to demonstrate choice of watercourse crossing by means of a decision tree, taking into account factors including catchment size (resultant flows), natural habitat and environmental concerns.

Culverts are a frequent cause of local flooding, particularly if the design or maintenance is inadequate. The size of culverts needs to be large enough to cope with sustained heavy precipitation, and allow for the impact of climate

change. This must be taken into account by developers and planning authorities. SPP and PAN69 provide more information on this aspect.

Measures to avoid erosion of the hillside associated with discharge from road culverting need to be set out in the ES.

All culverts must be designed with full regard to natural habitat and environmental concerns. Where migratory fish may be present (such as trout, salmon or eels) the river crossing should be designed in accordance with the Scottish Government guidance on River Crossings and Migratory Fish. This guidance can be found on the Scottish Government website at: <http://www.scotland.gov.uk/consultations/transport/rcmf-06.asp>.

Where the watercourse is used as a pathway by otters and other small mammals, the design of culverts will need to be modified to accommodate this.

The need for, and information on, abstractions of water supplies for concrete works or other operations should also be identified in the ES.

SEPA requests that evidence should also be provided to demonstrate that the proposals have been designed to minimise engineering works within the water environment, including crossing watercourses. Further to this, SEPA wishes to highlight the following Scottish National Policy, and legislative aims.

Environment, including crossing watercourses. Further to this, SEPA wishes to highlight the following Scottish Planning Policy and legislative aims.

Scottish Planning Policy (paragraph 130) states 'Lochs, ponds, watercourses and wetlands also form valuable landscape features, recreational resources and wildlife habitats and should be protected and enhanced wherever possible both as part of developments and green networks.'

In addition, where water abstraction is proposed, SEPA requests that the ES assesses whether a public or private source is to be utilised. If a private source is to be utilised, the following information should be included within the ES to determine the environmental acceptability of the proposals.

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

Although it is appreciated that many of the issues highlighted above will be scoped out during the EIA process they are important to consider. Equally,

the applicant should be aware that the drilling activity does not fall under Water Environment (Controlled Activities) Regulations (CAR) and therefore would not require authorisation from SEPA as the proposal is within coastal waters.

9.2 Geology And Soils

The Environmental Statement should fully describe the likely significant effects of the development on the environment including direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary e.g. construction related impacts, positive and negative effects of the development which result from:

- The existence of the development.
- The use of natural resources (including borrow pits, the need for which and impact of which, including dust, blasting and pollution of the water environment, should be appraised as part of the overall impact of the scheme)
- The emission of pollutants, the creation of nuisances and the elimination of waste.

The ES should identify the intended source of any rock or fill material to be used for tracks or foundations, and should describe the environmental impacts associated with any new quarries or borrow pits or road or track cuttings.

SEPA seeks in relation to substantial new development, that developers demonstrate that the development includes construction practices to minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials. Further information is available from AggRegain (<http://www.aggregain.org.uk>);

Where borrow pits are proposed, the ES should include information regarding the location, size and nature of these borrow pits including information on the depth of the borrow pit floor and the borrow pit final reinstated profile.

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 within Planning Advice Note 50: Controlling the Environmental Effects of Surface Mineral Workings in relation to surface water (pages 24-25) and, where relevant, in relation to groundwater (pages 22-23). Information on the proposed depth of the excavation compared to the actual topography, the proposed restoration profile, proposed drainage and settlement traps, turf and overburden removal and storage for reinstatement should be submitted.

9.3 Assessment Of Peat Slide Risk

If the proposed development is to take place on peatland habitats, the Environmental Statement should incorporate a comprehensive peat slide risk assessment in accordance with the Scottish Government Best Practice Guide for Developers, published at:

Particular attention should be paid to the risks of engineering instability relating to presence to peat on the site. Turbines locations should be identified in the light of survey work on peat depth and nature, and roads will need to be carefully aligned and designed with regard to peat habitats and depth. It is recommended that both engineers and ecologists are involved in the assessment and management of the risk of peat slide.

The peat slide risk assessment should also address pollution risks to and environmental sensitivities of the water environment. It should include a detailed map of peat depth and evidence that the scheme minimises impact on areas of deep peat. The ES should include outline construction method statements or the site-specific principles on which such construction method statements would be based for engineering works in peat land areas, including access roads, turbine bases and hard standing areas, and these should include particular reference to drainage impacts, dewatering and disposal of excavated peat.

9.4 Forestry / Woodlands

Internationally there is now a strong presumption against deforestation (which accounts for 18% of the world's greenhouse gas emissions). Reflecting this, Scottish Ministers have now approved a policy on Control of Woodland Removal published at <http://www.forestry.gov.uk/forestry/infd-7hyhwe> (refer Scottish Planning Policy paragraph 148) which seeks to protect the existing forest resource in Scotland, and supports woodland removal only where it would achieve significant and clearly defined additional public benefits. In some cases, including those associated with development, a proposal for compensatory planting may form part of this balance.

The criteria for determining the acceptability of woodland removal and further information on the implementation of the policy is explained in the Control of Woodland Removal Policy. These should be taken into account when preparing the development plans for this wind farm proposal. The developer should also be aware of the *National Planning Framework 2* (published at <http://www.scotland.gov.uk/Publications/2008/12/12093953/0>) and specifically paragraph 93 which reiterates Scottish Government determination to decrease the loss of existing woodland and aspiration for further expansion.

The ES should indicate proposed areas of woodland for felling to accommodate new turbines and other infrastructure such as roads. Details of the area to be cleared around those structures should also be provided, along with evidence to support the proposed scale and sequence of felling. The ES should also detail any trees or woodland areas likely to be indirectly affected by the proposed development (e.g. through changes in hydrology, loss of neighbouring plantation causing instability, etc) and provide full details of alternatives and/or protection and mitigation measures in the ES.

The developer should consider the wildlife implications of any tree felling in the relevant sections of the ES. The ES should also consider any impacts of forestry activities on the water environment, with particular attention paid to

acidification and nutrient leaching. The applicant should make full use of the *Forests and Water Guidelines* in proposing forestry activity and mitigation procedures.

If timber is to be disposed of on site, details of the methodology for this should be submitted. Areas of retained forestry or tree groups should be clearly indicated and methods for their protection during construction clearly described.

If areas of woodland are to be temporarily removed but then replanted shortly afterwards (typically within 1-5 years) this should be indicated in the ES, and details of the replanting plan provided.

Where there is a change in land use (e.g. to non-woodland habitats) the woodland should be described in sufficient detail (e.g. including details of the age of the trees; the species type and mix; the soil types; any particular natural heritage designations or protected species present in the woodland; and the landscape and historical environment context) to enable its intrinsic public benefit value to be assessed. This will facilitate decisions on whether woodland removal is acceptable and if so, whether compensatory planting will be required.

The developer should refer to guidance documents¹ issued by the Forestry Commission in relation to good forestry practice and associated environmental issues.

In summary, the developer should consider their response to the Control of Woodland Removal Policy, including the consequences of such removal on carbon sequestration and mitigating the potential effects of climate change.

Forestry Commission Scotland can advise on all aspects of woodlands and forestry associated with developments and early consultation with them to clarify proposals and any particular restrictions or conditions on woodland removal that may apply to the area is recommended. Contact details of the nearest Forestry Commission Conservancy office can be accessed at: <http://www.forestry.gov.uk> or from fcscotland@forestry.gsi.gov.uk.

Forest and woodland ecology

The *Scottish Forestry Strategy* (SFS) (2006) and *Scottish Biodiversity Strategy* (both of which have Ministerial endorsement) and *Nature Conservation (Scotland) Act 2004* should be essential documents that the developer should be aware of.

The SFS recognises the importance of native woodlands, especially those that are of ancient and semi-natural origin. It also incorporates targets for priority habitats and species, sets priorities for action in terms of improving the

¹ The UK Forestry Standard and its suite of associated guidelines are available at: <http://www.forestry.gov.uk/forestry/INFD-6J2JBS>. Further guidance is available at: <http://www.forestry.gov.uk/forestry/INFD-5XFLS7>.

management of semi-natural woodlands, and extending and enhancing native woodlands by developing forest habitat networks (page 48).

The SFS also recognises the potential for well designed productive forests to contribute environmental benefits through the restructuring process and future management systems, such as habitat and landscape value from increased open space (page 48).

The SFS also identifies and promotes the importance of sustainable forest management as an essential contributor to the conservation of soils, the quality of water and air (page 44), and the general contribution that forests and woodlands can make to tackle climate change.

The *Scottish Biodiversity Strategy* contains delivery of targets for priority habitats and species as key aims as well as enhanced management of whole landscapes for biodiversity, including reducing fragmentation of habitats. This strategy has been designated by Ministers under the terms of the *Nature Conservation (Scotland) Act 2004*, to confirm that all public bodies have a duty to further biodiversity where consistent with their functions, in ways which are guided by the strategy.

This would suggest that the developer should be obliged to carry out an assessment of the implications of the wind farm proposals on biodiversity. This should be in both general terms of effects on the biodiversity strategy aims, and specifically the impacts on priority habitats and species; i.e. those with national targets (*HAPs* and *SAPs* identified in the *Biodiversity Action Plan*).

It would also suggest that the developer should be obliged to carry out an assessment of the implications of the wind farm proposals on water, soil and air resources, and an appreciation of the potential consequences of the loss of woodland cover with regards climate change, specifically carbon sequestration.

Consultation with the local Forestry Commission Scotland Conservancy should also be undertaken during the development of proposals for the planned restructuring and/or woodland removal to accommodate the wind farm proposals.

Regards the *FC Forest and Water Guidelines* please note that this publication is now in its 4th Edition, published 2004.

Landscape and visual assessment

The *UK Forestry Standard*, *FC Forest Landscape Guidelines* and *Lowland Design Guidelines*, *FC Forestry Practice Guide: Forest Design Planning – A Guide to Good Practice*, *The Scottish Forestry Strategy 2006* and *SNH suite of Landscape Character Assessments* should all be on the list of documents that the developer should be aware of.

The *Scottish Forestry Strategy* identifies that forests and woodlands contribute to Scotland's diverse and attractive landscape. It promotes the benefits of well

designed and managed woodlands that reflect local landscape character, and that their contribution to the wider landscape should help Scotland meet the undertakings of the *European Landscape Convention* (page 44).

The Scoping Report should promote a full assessment by the developer of all the landscape and visual issues. This should include a full description of the general landscape character within which the developer proposes to introduce the wind farm, and a statement of the landscape and visual sensitivities that may be potentially affected by that development.

It should also include an assessment of the cumulative landscape and visual impacts affecting the wind farm proposal, and identify relevant criteria that may have a bearing on that assessment.

The *UK Forestry Standard* sets out the criteria and standards for the sustainable management of all forests and woodlands in the UK. Landscape is a specific *Criteria for Sustainable Forest Management* (page 18) and the two *Forest Management Unit Indicators* as evidence that landscape quality is enhanced are:

- Landscape principles of forest design are used;
- Cultural and historical character of countryside is taken into account when...making changes to existing woods.

The first point refers to the FC *Forest Landscape Guidelines* and *Lowland Design Guidelines* (both extracted from the FC book *The Design of Forest Landscapes* (Oliver W.R. Lucas; pub. Oxford University Press 1991)).

The second point on the appraisal of the landscape with regard to appreciating its local character is similarly covered in the aforementioned Guidelines and *The Design of Forest Landscapes*. Further, the *Scottish Forestry Strategy* specifically advocates the use of Scottish Natural Heritage's suite of *Landscape Character Assessments*, which provide valuable descriptive information about the landscape of Scotland. The potential removal of the existing woodlands within the wind farm proposal area may create significant areas of open ground (that is, ground without woodland cover).

The principles and process of restructuring an existing forest are described in the aforementioned FC Forestry Practice Guide: *Forest Design Planning – A Guide to Good Practice*. Not only should such a plan consider how best to clear fell the forest for the wind farm development, but also describe how the remaining woodland elements beyond the scheme boundary can be best integrated with the development site. Such integration could be achieved, for example, by the selective restocking of strategic areas within the wind farm site area.

We would advise that when forest landscape design is being considered as part of the forest management associated with such a development, a chartered Landscape Architect with a comprehensive knowledge of forestry should be commissioned.

Historic environment of forests and woodlands

The developer should recognise the wider aspects of the wind farm proposals on historic environment policies. In terms of forests and woodlands, besides the legacy of the past to be found within woodlands, the cultural heritage of ancient woodlands and veteran trees are particularly important. The value of the historic environment in woodlands is recognised in the *UK Forestry Standard* the *Scottish Forestry Strategy* (SFS) (page 45) and FCS Policy Statement *Scotland's Woodlands and the Historic Environment*.

The SFS not only identifies the duty to safeguard evidence of the historic environment but also encourages their active management, enhancement and interpretation. Reference should also be made to the FC *Forests & Archaeology Guidelines*.

Management Plan

With regards both ecological and landscape considerations for the site and immediate environs, we would advocate the preparation of a long-term management plan.

This should be carried out in consultation with FCS, Local Authority, SNH, landowners and other interested parties. Essentially what is required is an integrated land-use and management plan that fosters optimising the ecological and landscape benefits of both the wind farm site and neighbouring land uses.

10. Other Material Issues

10.1 Waste

Potential requirement for waste management licences or licensing exemptions in relation to waste disposed to or from borrow pits should be discussed at an early stage with SEPA as decisions on waste management are likely to affect site design and layout.

The ES should identify all of the waste streams (such as peat and other materials excavated in relation to infrastructure) associated with the works. It should demonstrate a) how the development can include construction practices to minimise the use of raw materials and maximise the use of secondary aggregates and recycled or renewable materials and b) how waste material generated by the proposal is to be reduced and re-used or recycled where appropriate on site (for example in landscaping not resulting in excessive earth moulding and mounding).

Further to the above advice, SEPA would like to highlight the use of site waste management plans which SEPA are now seeking on all large scale construction projects and which the applicant should consider during the formulation of the ES. In SEPA's experience, waste management is becoming an increasing issue on large scale projects.

Coherent consideration should be given to the handling, use, short term storage and final disposal of surplus material, including peat and soils, and to waste minimisation and management. Should it be proposed that peat should be used at depth to restore excavations such as borrow pits, the applicant would need to demonstrate that this could be done without the release of carbon through oxidisation, and without risk to people and the environment. Please note that waste peat or soil from excavations spread on this land would not necessarily be to ecological benefit; if excavated peat or soil is to be used in landscaping the site, then this should be included in the plans, and not dealt with in an ad-hoc fashion as it arises.

SEPA therefore requests that the ES gives consideration to a full site specific Site Waste Management Plan (SWMP). The SWMP should detail the measures for managing and minimising waste produced during construction. Further information on the preparation of these plans can be obtained from the Zero Waste Scotland web site which may be found at <http://www.zerowastescotland.org.uk/category/service/business-support>.

The SWMP should also include a soils balance carried out to demonstrate need for importation/export of materials including any backfill of excavations. Given experience on other sites, clarification is sought specifically on whether or not waste materials are to be imported. Clarification of the amount of surplus materials to be permanently deposited on mounds and scale of these mounds should also be included.

SEPA encourages the recovery and reuse of controlled waste, provided that it is in accordance with the Waste Management Licensing Regulations 1994. The applicant should note the regulatory advice below. The developer should note that SEPA has produced guidance to assist in the consideration as to whether any particular material is waste, which is available on SEPA's website at http://www.sepa.org.uk/waste/waste_regulation/is_it_waste.aspx.

10.2 Telecommunications

British Telecom will offer advice in respect of EMC and related problems, BT point to point microwave links and satellite. Any information on the likely interference to BT's current and presently planned radio networks should be enclosed.

Ofcom only comment in respect of microwave fixed links and does not include broadcast transmissions or scanning telemetry links that may be affected by your proposals. A copy of your scoping request has been sent to:

CSS Spectrum Management Services Ltd. David Tripp 01458 273 789
david.tripp@css.gb.com (for Scanning Telemetry)

Joint Radio Company (JRC). David Priestley 020 7953 7015
david.priestley@jrc.co.uk (for Scanning Telemetry)

With regard to assessing the affects to TV reception, the BBC now have an online tool available on their website, at http://www.bbc.co.uk/reception/info/windfarm_tool.shtml. Ofcom will no longer

be forwarding enquiries received to the BBC or carrying out assessments. Developers are advised to access the online tool.

Ofcom only comment in respect of fixed microwave links managed by the Ofcom, in addition you are obliged to do further checks of your proposals with the CAA, NATS, and the MOD. Further details may be obtained on the British Wind Energy Association (BWEA) website. The MoD Estates Safeguarding contact is Chris Evans on 0121 311 3847.

10.3 Noise

Wind farms have the potential to create noise through aerodynamic noise and mechanically generated noise. Noise predictions should be carried out to evaluate the likely impacts of airborne noise from the wind turbines and associated construction activities including noise from blasting or piling activities which may affect local residents, during construction, operational and decommissioning stages of the project. Advice should be sought from the relevant Council planning and/or environmental health departments in respect to the potential impacts on the local community.

You should be aware of the guidance produced by ETSU on behalf of the DTI titled "The Assessment and Rating of Noise from Wind Farms". This publication provides developers with best practice noise monitoring and reporting techniques. Cumulative noise effects should also be considered in assessing the specific circumstances prevailing at the development site. Developers may also want refer to PAN 1/2011 in this respect.

10.4 Shadow Flicker

Information on the impact of shadow flicker on the local community should be enclosed within the ES. Information on this can be found at:

10.5 Traffic Management

The Environmental Statement should provide information relating to the preferred route options for delivering the turbines etc. via the trunk road network. The Environmental Impact Assessment should also address access issues, particularly those impacting upon the trunk road network, in particular, potential stress points at junctions, approach roads, borrow pits, bridges, site compound and batching areas etc.

Where potential environmental impacts have been fully investigated but found to be of little or no significance, it is sufficient to validate that part of the assessment by stating in the report:

- the work has been undertaken, e.g. transport assessment;
- what this has shown i.e. what impact if any has been identified, and
- why it is not significant.

10.6 Cumulative Impacts

Where a wind farm development might have cumulative impacts with other existing, approved or current wind farm applications, then the assessment of environmental impacts should include consideration of these cumulative effects. Visual or landscape cumulative effects may arise where more than one wind farm is visible from certain viewpoints, or along a journey by road or other route. Ecological cumulative effects may arise where more than one wind farm impacts upon a bird population, or on the hydrology of a wetland or peatland habitat.

SPP introduces new requirements in relation to considering cumulative impacts through the development plan process. Where relevant, proposals should identify how they comply with development plans. We also refer to the SNH guidance note 'Cumulative Effect of Wind Farms' (version 2 revised 13.4.05) for further guidance. A cumulative assessment should include other existing wind farms in the vicinity of the proposal, any wind farms which have been consented but are still to be constructed, and any which are the subject of undetermined consent applications. Inclusion within a cumulative assessment of other proposed wind farms which have not yet reached application stage is not required, unless in exceptional circumstances we advise otherwise.

<http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/>

10.7 Other Planning Or Environmental Impact Issues Unique To The Application

The ES should include information on any other potential impacts connected with the project.

11. **General ES Issues**

In the application for consent the applicant should confirm whether any proposals made within the Environmental Statement, eg for construction methods, mitigation, or decommissioning, form part of the application for consent.

11.1 Consultation

Developers should be aware that the ES should be submitted in a user-friendly PDF format. Developers are asked to issue ESs directly to all consultees. An up to date consultee list can be obtained from the Energy Consents and Deployment Unit. The Energy Consents and Deployment Unit also requires **1 hard copy and 2 CDs**.

Where the developer has provided Scottish Ministers with an environmental statement, the developer must publish their proposals in accordance with part 4 of the Environmental Impact Assessment (Scotland) Regulations 2000. Energy consents information and guidance, including the specific details of

the adverts to be placed in the press can be obtained from the Energy Consents website; <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-Consents>

11.2 Gaelic Language

Where s36 applications are located in areas where Gaelic is spoken, developers are encouraged to adopt best practice by publicising the project details in both English and Gaelic (see also Energy consents website above).

11.3 OS Mapping Records

Developers are requested at application stage to submit a detailed Ordnance Survey plan showing the site boundary and all turbines, anemometer masts, access tracks and supporting infrastructure in a format compatible with the Scottish Government's Spatial Data Management Environment (SDME), along with appropriate metadata. The SDME is based around Oracle RDBMS and ESRI ArcSDE and all incoming data should be supplied in ESRI shapefile format. The SDME also contains a metadata recording system based on the ISO template within ESRI ArcCatalog (agreed standard used by the Scottish Government), all metadata should be provided in this format.

11.4 Difficulties In Compiling Additional Information

Developers are encouraged to outline their experiences or practical difficulties encountered when collating/recording additional information supporting the application. An explanation of any necessary information not included in the Environmental Statement should be provided, complete with an indication of when an addendum will be submitted.

11.5 Application And Environmental Statement

A developer checklist is enclosed with this report to help developers fully consider and collate the relevant ES information to support their application. In advance of publicising the application, developers should be aware this checklist will be used by government officials when considering acceptance of formal applications.

11.6 Consent Timescale And Application Quality

In December 2007, Scottish Ministers announced an aspirational target to process new section 36 applications within a 9 month period , provided a PLI is not held. This scoping opinion is specifically designed to improve the quality of advice provided to developers and thus reduce the risk of additional information being requested and subject to further publicity and consultation cycles.

Developers are advised to consider all aspects of this scoping opinion when preparing a formal application, to reduce the need to submit information in support of your application. The consultee comments presented in this opinion are designed to offer an opportunity to considered all material issues relating to the development proposals.

In assessing the quality and suitability of applications, Government officials will use the enclosed checklist and scoping opinion to scrutinise the application. Developers are encouraged to seek advice on the contents of ESs prior to applications being submitted, although this process does not involve a full analysis of the proposals. In the event of an application being void of essential information, officials reserve the right not to accept the application. Developers are advised not to publicise applications in the local or national press, until their application has been checked and accepted by SG officials.

Developers are advised to refer to the Energy Consents website at <http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Energy-Consents>

11.7 Judicial Review

All cases may be subject to judicial review. A judicial review statement should be made available to the public.

Authorised by the Scottish Ministers to sign in that behalf.

Consultee Comments relating specifically to Linfairn Farm Wind Farm

Statutory Consultees

1. South Ayrshire Council
2. SEPA
3. SNH

Scottish Government Internal Consultees

4. Directorate for the Built Environment
5. Forestry Commission Scotland
6. Historic Scotland
7. Marine Scotland
8. Transport Scotland

Non Statutory External Consultees

9. Association of Salmon Fishery Boards
10. BT
11. CAA Airspace
12. Crown Estate
13. Defence Infrastructure Organisation
14. Joint Radio Company
15. Mountaineering Council of Scotland
16. NATS
17. RSPB Scotland
18. Scottish Water
19. Visit Scotland
20. Scottish Badgers
21. Glasgow Prestwick Airport

CONSULTEE COMMENTS

1. SOUTH AYRSHIRE COUNCIL

Below, I have set out the principle views and comments on the scoping report provided by SgurrEnergy Ltd. The views and comments in this letter constitute South Ayrshire Council's formal consultation response.

Policy Constraints

In developing the proposal and preparing the Environmental Statement, particular regard should be afforded to the various international and national guidance detailed in section 2 of the '*Linfairn Wind Farm Environmental Impact Assessment: Scoping Report*'. Particular regard should also be given to the provisions of the relevant development plans, comprising the approved Ayrshire Joint Structure Plan (AJSP), the adopted South Ayrshire Local Plan (SALP), the South Ayrshire Proposed Local Development Plan (SAPLDP) (now a material consideration) and the adopted East Ayrshire Local Plan (EALP); Addendum to the Ayrshire Joint Structure Plan Technical Report TR03/ 2006: Guidance on the Location of Windfarms within Ayrshire; and other material planning policy considerations.

It is understood that East Ayrshire Council is preparing a new Local Development Plan (LDP) which will cover the whole region and will replace the adopted Structure Plan and adopted Local Plan. The new LDP is at a very early stage of development and it is anticipated that the LDP will be submitted to Scottish Ministers in 2013.

Consideration of Alternatives

Schedule 4, paragraph 2 of The Town and Country Planning Environmental Impact Assessment (Scotland) Regulations 2011 and Schedule 4, part II, paragraph 4 of the Electricity Works (environmental Impact Assessment (Scotland) Regulations 2000 require that all Environmental Statements should include information on the main alternatives studied and indicate the main reasons for choosing the selected option, with reference to the environmental effects. Consideration of alternatives will therefore be required in relation to turbine specification, site layout and other design considerations.

Landscape Implications

Consideration should be given to the potential effects of the development upon local scenic designations, as defined in the Structure and Local Plans and the SAPLDP; other built and natural heritage designations (e.g. listed buildings) within the study area and wider landscape. Regard should be had to the impact of the development on landscape character, as defined in the Ayrshire Landscape Character Assessment. The landscape and visual assessment should address all aspects of the proposal (access to the site and within the site, borrow pits, control/ transformer buildings, forestry/ tree felling)

as well as turbine locations and should be conducted in accordance with industry best practice.

It is noted that matters relating to landscape, forestry management, access etc. are specifically addressed in the '*Linfairn Wind Farm Environmental Impact Assessment: Scoping Report*'.

Cumulative Impacts

The cumulative impacts arising from windfarm developments are becoming increasingly important considerations in the assessment of such proposals, given the number of existing operational windfarms in the area, windfarms with permission and windfarm developments at application, scoping and pre-scoping stages. The relationship of the of the Linfairn Windfarm proposal to operational and consented windfarms (in particular windfarms at Dersalloch and Hadyard Hill) should be assessed, together with other developments which are the subject of undetermined Section 36 or planning applications and, where possible, proposals at formal scoping stage. Particular account should be taken of the views of Scottish Natural Heritage, South Ayrshire Council and East Ayrshire Council on the cumulative landscape and visual impact of the Linfairn Windfarm proposal. It is important that any cumulative assessment should not only address inter visibility and the visibility of multiple windfarms from key viewpoints, but should also address the consequences of travelling through the landscape and sequential views.

It is noted that the visual impact assessment will be carried out in line with the Guidelines for Landscape and Visual Impact Assessment (Landscape Institute and Institute of Environmental Management and Assessment, 2nd Edition 2002), and Cumulative Effects of Wind Farms (SNH, 2005).

Zones of Theoretical Visibility (ZTVs)

It is desirable that individual and cumulative ZTVs be prepared early on in the assessment process and it is a Landscape and Visual study undertaken by an independent consultant is welcomed. Representative viewpoints should be agreed in advance with South & East Ayrshire Councils and Scottish Natural Heritage. A minimum of 35km ZTV is recommended which should include a provisional list of views, with an indication of distance and the evaluation and justification for their inclusion or omission (e.g. sequential road view/ fixed view from distant hill/ key skyline views; views on approach to/ impact on the landscape setting of settlements and built and cultural heritage features; locally important views/ landmarks; views from rights of way/ walking routes/ residents views/ popular recreation areas/ water based e.g. coastal views etc).

The initial list of fixed and sequential viewpoints, in relation to the assessment of individual and cumulative landscape and visual impacts, should be provided and agreed upon with SNH and both South and East Ayrshire Councils as part of the scoping exercise.

These should be used to influence the site layout process, and the zone should include wind farm projects known to be at application or decision stage within 35km distance from the proposed development.

Designing Principles

The layout of the site should be designed so as to minimise the impact of the development upon key environmental features, significant views and sites designated for their ecological, historical, cultural or scenic qualities, including gardens and designated landscapes. The principles to be adopted in the design process should be made explicit, and could take the form of a Design Statement as advocated in PAN 68.

Protected Species

Although the proposed site is not affected by any national or international natural conservation designations, the ES should include a survey and assessment of the short and long term impacts of the development upon species of flora and fauna, protected under EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the “Habitats Directive”) or the Wildlife and Countryside Act 1981. The ES should state the significance of the site for protected species, both in terms of the abundance and distributions of populations, frequency of use, and identification and significance of important sites.

It is noted that an extended phase 1 habitat survey will be undertaken, supplementing information made available through the Ayrshire Joint Planning Steering Group website.

Ornithology

The ES should include a detailed ornithological assessment, which should address a range of likely target species: the presence on, or around, the site of hen harrier, golden eagle, short eared owl, barn owl, merlin, peregrine falcon, golden plover and black and red throated diver, all of which are listed on either Annex 1 of EU Birds Directive 1979 or Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). The ES should assess the likely impact of the construction and operational phases of the development on these species and their habitat.

Ecological Assessment

The ecological assessment of the proposals should include a vegetation survey to National Vegetation Classification level, an analysis of habitat loss and mitigation and enhancement measures in respect of identified adverse consequences for nature conservation interests. Designated habitats should be assessed in detail, including a full peat depth analysis and peat slide risk assessment, and the results used to inform the location of turbines, other structures, access tracks and the route of grid connections. Sites designated for their nature conservation importance, both within and around the application site, such as SSSIs, will require special consideration. Details of these sites may be obtained from the relevant designating body, such as Scottish Natural Heritage, the Scottish Wildlife Trust or the Royal Society for the Protection of Birds. Mitigation measures should address opportunities for

the restructuring of those areas of forestry which would be retained and planting or other measures on or off the site which could increase the habitat value of the site and surroundings.

Short-term Impacts

The consequence of construction works should be assessed and addressed by means of a method statement, environmental management plan, mitigation programme, reinstatement measures and monitoring regime. These techniques should deal with the timing of works in relation to ornithological interests, the long-term management of areas to be cleared of forestry and site restoration proposals following decommissioning. There will be a need to protect all watercourses, tributaries and river catchments. The effects of construction activities on water quality should be assessed, to avoid in particular, sedimentation and accidental spillages. This will apply to turbine base formation, access road construction and borrow pit extraction operations. Consideration should be given to the need for silt traps and possibly a settlement lagoon and, dependent on effluent quality, a discharge consent from SEPA may be required. Any private water supplies should be protected during and after construction. The development should maximise the use of secondary aggregates or recycled materials and the production of waste materials should be minimised.

Built and Cultural Heritage Resources

The ES should assess the direct and indirect impacts of the proposed development (individually and in association with other existing and proposed windfarms) upon heritage resources and their settings within the zone of visual influence of the development, including scheduled monuments, unscheduled archaeological sites, listed buildings, conservation areas and gardens and designated landscapes.

The conservation village of Stration is located in close proximity to the proposed development site and particular regard should be given to the direct and indirect impacts of the proposed development upon this heritage resource.

Tourism/ Recreation and Public Access Resources

The ES should address the consequences of the development for users of the countryside and its direct and indirect impacts on tourism and recreational interests and resources in the vicinity.

Amenity Issues

The consequences of the proposed windfarm for occupiers of the property within the vicinity of the development, as well as countryside users, should be assessed, in terms of impact on views from properties and access routes; noise from the construction and operational phases of the development; dust from the construction phase of the development; noise, fumes and vibration from HGV traffic movements generated by the development; and shadow

flicker. A noise assessment methodology should be submitted in respect of both the construction and operational phases of the development.

Traffic and Transportation Issues

The ES should assess the impact of the construction and operational phases of the proposed development on the public road network in terms of the effects of the additional vehicular traffic generated, particularly heavy good vehicles and abnormal loads comprising turbine components, on traffic management, road safety, road layout and road condition.

Aviation

The consequences of the proposal for military and civil aviation should be assessed, notably the impact of the wind turbines on operations within the MOD Low Flying Tactical Training Area 20T and upon airport approach and en-route air traffic control radar systems, including impact with other operational, consented and proposed windfarms. In this respect, further consultation with Defence Estates, the Civil Aviation Authority, National Air traffic Services and Glasgow Prestwick Airport will be essential.

Telecommunications

The impact of the proposed development on domestic television reception in the area and on any civil or military broadcast linkages traversing the site should be assessed and any necessary mitigation measures identified.

2. SEPA

We consider that the key issues below should be addressed in the EIA process.

Windfarm developments can make a valuable contribution to achieving Scotland's renewable targets and help fulfil public sector duties under the Climate Change (Scotland) Act 2009. However, even small windfarms can potentially have an adverse environmental impact. 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.

Carbon balance

Scottish Planning Policy (SPP) recognises that "the disturbance of some soils, particularly peat, may lead to the release of stored carbon, contributing to carbon emissions" (Paragraph 133). In line with SPP and government guidance, we recommend that the ES or planning submission contains a section systematically assessing carbon balance. This assessment should quantify the gains over the life of the project against the release of carbon dioxide during construction. It should include all elements of the proposal, including borrow pits, construction of roads/tracks and other infrastructure and

loss of peat bog. Please refer to the Scottish Government guidance [Calculating carbon savings from windfarms on Scottish peat lands - A New Approach](#), which provides a revised methodology for estimating the impacts of this type of development on carbon dynamics of peat lands. We will validate carbon balance assessments for Section 36 windfarm applications that use this revised version of the tool. In order to validate such assessments, all input data, assumptions and workings need to be provided within one dedicated section of the ES. In addition we will provide comment on drainage and waste management aspects of the peat management scheme to ensure that the carbon balance benefits of the scheme are maximised.

Disruption to wetlands including peatlands

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.

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.

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.

The route or location of roads, tracks or trenches within 100 m, or borrow pits or foundations within 250 m, of groundwater dependent terrestrial ecosystems identified in Appendix 2 should be reconsidered. If infrastructure cannot be relocated outwith the buffer zones of these ecosystems then the likely impact of these features will require further assessment. This assessment should be carried out whether or not the features occur within or outwith the site boundary in order that the full impacts on the proposals are assessed. The results of this assessment and proposed mitigation measures should be included in the ES.

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.

Disturbance and re-use of excavated peat

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.

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.

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.

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.

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.

Our [Planning and Energy webpage](#) provides links to current best practice guidance on peat survey, excavation and management.

Forest removal and forest waste

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.

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.

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.

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.

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.

Existing groundwater abstractions

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.

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](#).

Engineering activities in the water environment

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.

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.

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.

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.

Water abstraction

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.

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.

Pollution prevention and environmental management

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.

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](#).

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).

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](#).

Borrow pits

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.

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.

Air quality

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.

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](#).

Flood risk

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](#).

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.

Regulatory advice for the applicant

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:

31 Miller Road
Ayr
KA7 2AX

3. SNH

It is our view that under The Environmental Impact Assessment (Scotland) Regulations 1999 the scoping document should provide a draft outline of the Environmental Statement (ES) for the development proposal. It should give an indication of what are considered to be the main issues, in order to provide a focus for the determining authority's considerations. SNH expects the Scoping Report to comprehensively address the issues which are to be covered in the Environmental Impact Assessment (EIA).

General

The document submitted is generic in nature and contains no meaningful reference to or analysis of, the potential ecological impacts, nor landscape or visual issues, associated with a potential windfarm development at Linfairn in South Ayrshire. The Scoping Report should contain as much detail as possible on the proposed methodologies and how and why they are to be used.

SNH's Interim opinion

Of particular note is that the SR refers at section 1.4 to 'Appendix C' containing the relevant maps and figures, which are referred to within the Report. There is no Appendix C in the document we have received. Our comments below on this SR are therefore not as useful as they could be and may be regarded as interim at this stage. Once we have seen Appendix C we will comment further. However you will note from these comments below and our general impression of the generic nature of the document, we believe further work should be done to provide a comprehensive Scoping Report and we will be pleased to comment further both when the comments below are addressed and when Appendix C is available.

SNH's Comments on Issues to Include in Environmental Impact Assessment

The EIA should address all aspects of the proposed development including, for example, temporary construction infrastructure, compounds and construction material stockpiles, main access and on-site tracks, borrow pits, water crossings, crane hardstandings, turning points and passing places associated with access tracks, meteorological mast, transformers, cabling, grid connection, control/metering/switching building and proposals for site restoration on decommissioning.

This scoping response highlights SNH's key areas of concern which we consider should be scoped into any Environmental Impact Assessment (EIA) for this windfarm proposal. In this response we address:

1. Strategic Locational Guidance
2. Nature Conservation Designations
3. Landscape and Visual Assessment
4. Ecology (excluding birds)
5. Bird Ecology
6. Hydrology, hydrogeology and geology
7. Recreation and Access

SNH's Summary Comments Scoping Report (SR)

As noted above we find this SR lacking in some key areas as summarised below and detailed in Appendix 1.

- There is no Appendix C detailing the layout including location of turbines and all the infrastructure and construction facilities required for the proposed development as described in the SR
- The natural conservation designation lists of sites likely to be affected is deficient particularly omitting a Site of Special Scientific Interest (SSSI) situated within the development boundary
- No walk over survey has been undertaken to inform the SR of the key habitats and species present and which are of significance
- No reconnaissance survey for target bird populations has been undertaken
- No indication of how the ES will identify any cumulative impacts on ecological interests, particularly birds interests
- There is no ZTV to identify key landscape and visual impacts
- No wireframes of proposed viewpoints has been provided
- No indication of the scale and focus for cumulative landscape and visual amenity impacts
- There is no confirmation of one of the reference documents for siting of windfarms being used; '*Siting and Designing Windfarms in the Landscape guidance*'. SNH considers this is a key reference document both in terms of the individual design of the development, and its cumulative design with other developments in the wider Ayrshire landscape.

Detailed advice relating to this Scoping Report is provided below in **Appendix 1**. SNH policy and guidance for wind farm development is provided in Appendix 2. Information is provided on the legislative requirements for European Protected Species is provided in Appendix 3.

We view this response as interim due to the lack of key information to properly inform our scoping opinion. We will comment further if the Energy and Climate Change Directorate believe this will be useful.

If you have any questions on the contents of our response please contact Dorothy Simpson at 0141 951 4488 e-mail dorothy.simpson@snh.gov.uk

Appendix 1

SNH's Comments on the Scoping Report (SR) (numbering and titles as per the SR sections)

1.1 Background

There is considerable uncertainty of the scale of this proposal. SNH advises that a 'worst case scenario' should be the basis of the EIA, and therefore the scope of the ES should address the maximum height, the maximum number of turbines, borrow pits, track and all other associated infrastructure.

We note the grid connection will be subject to a separate application to the network operator, Scottish Power Distribution Limited. SHN advise that the grid connection is associated with this application and thus the EIA should at least include indicative proposals for this element.

1.3 Objectives of this Report

The Report suggests one of its objectives is to; *'highlight other relevant bodies or organisations that may have a vested interest in the scheme or be able to provide relevant information'*. In this regard SNH suggests contact is made with the following organisations:

- Ayrshire Rivers Trust
- Ayrshire Bird recorder
- British Trust for Ornithology
- Raptor Study Group

1.4 Scoping Report Format

The Report confirms that the Scoping Report should include; *'a plan sufficient to identify the site which is the subject of the proposed development'*. SNH is not satisfied that this Scoping Report fully addressed this requirement (as we note above). There is also reference to the report to and 'Appendix C' containing the relevant maps and figures, which are referred to within the Report. There is no Appendix C in the document we have received.

In the absence of the above we offer some limited comment on the impact of the layout. We note the site elevation ranges between 120m and 425m AoD running up slopes to Backfell. The turbines proposed at heights of 126.5m to tip, if placed at a range of elevations could create a complex and unbalanced windfarm design which dominates local landform. In addition the underlying landscape character is described in the Ayrshire Landscape Character Assessment (LCA) as transitional between the lowlands, and upland plateaux, which is often highly sensitive in character.

2.1.5 Ayrshire Supplementary Planning Guidance: Wind Farm Development

We note this paragraph identifies amongst the potential areas of constraint that the site is shown within an area with potential to impact on civil and military aviation interests. The ES should make clear if this will result in the need for lighting of the turbines, which turbines will require lighting and at what level and include illustrations of this to ascertain the landscape and visual impact.

3.1 Site Description and Context

This section describes the location of the proposed development as ‘*..approximately 1 km south-west of Straiton, South Ayrshire...*’ However at **5.1.3.3 Visual Amenity** the location is described follows ‘*...The nearest main settlement is the village of Straiton, located 4 km to the north of the site boundary..*’. While at 5.2.2 SITE DESCRIPTION the SR notes, ‘*...The Linfairn site is situated in East Ayrshire, Scotland, 0.8 km southwest of the village of Straiton...*’

As noted above without a layout map it is not possible to know which of these statements is correct and thus what impact the proposals will have on this settlement. In addition it should be noted Straiton and the development site are in South Ayrshire Council area.

3.4 Dynamic Design Process

We would expect the Scoping Report to include a design statement outlining some key features of the site and surrounding area and how the windfarm will relate to these. This section only outlines a list of constraints and no overall principles behind the design of the proposal.

We would expect this process to provide evidence in terms of the individual and cumulative design of the development to be contained within the ES. This will form a vital part of embedded mitigation. In relation to the design of the windfarm we would expect the layout iterations to consider alternative turbine heights and numbers to mitigate landscape, visual and cumulative impacts, as well as impacts of ancillary development in particular access tracks.

The strategy should explain the design principles behind the layout plan in a rational way that can be easily understood. The design strategy for the wind farm should be expressed through a design statement. The Design Statement should describe a clear strategy for meeting these objectives, a justification for the resulting layout and evidence that the design ideas have been tested against the objective.

4. GENERAL EIA METHODOLOGY

4.1 Overview

We agree the terms in Table 2 Assessment of Magnitude, however we have concerns about Table 3: Assessment of Impact Significance. There is no interpretation of what would be considered Negligible, Low, Medium or High in term of receptors. Therefore we cannot confirm the matrix is appropriate in terms of the values ascribed to the ‘Significance of impacts’. As a rule we normally assign high significance to circumstances where the receptor is of medium sensitivity and the magnitude of impact is High and also the result where the receptor is of high sensitivity and the impact medium. Similar alterations would affect the rest of the table.

5. ENVIRONMENTAL CONSIDERATIONS AND SCOPE OF EIA

5.1 Landscape Character And Visual Impact

5.1.3.1 Landscape Designations

We can only comment fully on the scope of landscape character and visual amenity impacts if we are provided with a ZTV and some sample illustrations of impacts without this information we cannot be sure locations noted here represent a comprehensive record.

The SR identifies several Historic Gardens and Designed Landscapes (HGDL) close to the proposed development. Historic Scotland should be included in any consultation regarding this development. SNH can advise that a thorough assessment should be carried out for any HGDL in the 35km study area that will have visibility of the windfarm. The HGDLs scenic value contributes greatly to the wider landscape character and the impacts of windfarm development, to the setting, views to and from these gardens must be considered

In addition the EIA should include information on the various sensitivities, values or qualities for which each designated area is valued including the areas afforded 'Scenic Area' status in the Plan local. This is vital to allow an assessment of impact. For your information this area falls within Zone 2 medium natural heritage sensitivity in relation to SNH's '*Strategic Locational Guidance for Onshore Wind Farms in Respect of the Natural Heritage*'

5.1.3.2 Landscape Character

Without the ZTV it is not possible to confirm the types of landscape character areas affected by the proposed development are correct. However in the EIA it is important that the capacity of each different LCT is assessed as to its ability to accommodate the proposed windfarm.

5.1.3.3 Visual Amenity

The ES should outline provisions made regarding public access, having regard for the requirements of the Land Reform (Scotland) Act 2003, clarifying the extent of any access restrictions required during site construction and operation. It should indicate any re-routing of public access. The ES should identify opportunities to develop new routes for public access free of the influence of windfarm development and how these can relate to existing routes. It should also show how any new public access routes, created as a result of the proposal, can provide links the surrounding access network. We encourage the developer to make a commitment to offsite works to make these connections.

We will look for an assessment of the significance of any positive and negative impacts that will occur upon outdoor activities as a consequence of the development proposals. The ES should clearly indicate the impacts on

recreational enjoyment that the proposed development will have on those pursuing outdoor recreation including golfing, using cycle routes, public footpaths and rights of way and any locally important informal recreational routes.

5.1.5 Impact Assessment

5.1.5.1 Landscape

The SR identifies an 'inner study area' of within 15km from the of the development periphery. There is no illustration or other justification for the selection of this area. If such an area is to be targeted for a more detailed assessment there should be evidence and justification as to why this is selected and also why a wider are or different area is not.

We would expect the LVIA and CLVIA study areas to assess impacts to an appropriate level, out to the full extent in relation to current guidance (35kms for individual development and 70km for cumulative assessment). A concentrated more detailed assessment should be informed by where the predicted significant impacts are likely to arise. Limitation of study areas at the arbitrary distances of 15km and 35km, cannot be substantiated at this early stage and should be avoided.

Only on completion of initial impact assessment should limitation of study areas be undertaken (ideally justified to and agreed with the Local Authority and SNH). In particular the limitation of the cumulative study area has the potential to underestimate or overlook significant impacts on the more strategic landscape and visual resources - such as impacts upon the landscape character resource and/or sequentially along roads and walking or cycle long distance routes that extent beyond a 35km threshold. It should also be borne in mind that, too wide a study area could result in a meaningless cumulative assessment, distracting from the very significant more regional or local cumulative effects.

We note the intention to prepare the EIA 'with reference to' SNH's guidelines and we expect that these guidelines will indeed be used as an assessment tool in order that SNH and the competent authority can have confidence in the assessment conclusions.

It should be noted that *Guidelines on the Environmental Impacts of Windfarms and Small Scale Hydroelectric Schemes: SNH Natural Heritage Management Series (February 2001)* is superseded in some of its guidance by [Siting and designing windfarms in the landscape](#) (2009) as noted above. SNH is also due to publish its new cumulative guidance shortly. Prior and during the assessment period the SNH website <http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/> should be checked incase new or revised documents have been produced. We also include the attached scoping checklist:

ZTVs should be supplied both to blade tip and hub height as standard. If forestry cover is to be a significant screening factor (as suggested in the SR), then consideration should be given to producing a more detailed ZTV which

models the main forest blocks in terms of how they may influence predicted visibility.

In relation to the above forest removal, this should be considered in the LVIA, and even illustrated in some of the photomontages where appropriate.

5.1.6 Cumulative Impacts

SNH is extremely concerned that the integrity of the South Ayrshire Scenic Area designation will be undermined due to the present cumulative scenario of windfarm development. The cumulative assessment must address this issue thoroughly and provide robust findings that there is the capacity for this windfarm alongside existing, consented and proposed, without damaging the integrity and special qualities of the designation.

It is recognised within the SR (Section 4.1.3) that cumulative impacts are to be an important issue for this Project. However we consider that the importance of this issue is not duly reflected in the extent to which this issue is scoped.

The proposed approach to assessing a number of windfarm scenarios (with ever decreasing certainty of the baseline landscape) is now commonplace. However SNH is not clear on the details of what is proposed in the SR. The cumulative assessment of the Linfairn development with those existing and in construction should be part of the established baseline LVIA - as these are the 'reality' of the current landscape.

There is some crossover between the cumulative assessment with 'existing' operational development, and the cumulative assessment with 'potential' scenarios of development (including those consented - as they do not always get built). This needs to be carefully laid out in the ES, so that it meaningfully informs how certain a cumulative effect is likely to be experienced in terms of the different scenarios.

The CLVIA should then take forward the 'existing' scenario and further consider:

- the addition of Linfairn with those existing/in construction and those consented;
- The addition of Linfairn with those existing/in construction, those consented and those in planning.

It is important both the cumulative assessments consider that it is the '**additional**' cumulative impact of Linfairn with the various developments to avoid excessive assessment of all cumulative impacts of all the different windfarms. The SR refers to developments 'in combination with' which could imply that a proximity of development is more likely to lead to cumulative impact. This is a misleading basis for assessment. For example cumulative impacts can arise with the introduction of windfarms into a landscape where previously there were none, or indeed there can be infrequent sequential cumulative impacts along a route where two developments are viewed in succession.

As we have concerns regarding this topic in general in this area, and there is limited information in the SR, we advise the Directorate that further detail is requested on the Scope of this cumulative assessment in terms of the methodology. This could be provided along with supporting information such as ZTVs and initial maps of the cumulative windfarm scenarios as they current stand, to inform further consultations.

5.2 Ecology and Ornithology

5.2.4 Baseline

5.2.4.1 Designated sites

Table 6: Protected sites within 10km of Linfairn Wind Farm site omits the following Sites of Special Scientific Interest (SSSI).

Knockgardner SSSI I which is located within the red line development boundary, Blair Farm SSSI 1km west of the red line development boundary, Roughneuk Quarry 7km west of the red line development boundary.

These are all geological SSSIs and apart from Knockgardner, unlikely to be affected by the proposed development. However they should be noted in the ES and evidence including lack of direct or indirect impacts used to demonstrate that there will be little or no impact. There is potential for significant impact on Knockgardner SSSI and we expect this to be fully assessed.

The SR does not record any initial walk over survey but relies on desk top information to substantiate the initial comment in para **5.2.5.2 Ecological Sensitivities:**

“...No significant ecological sensitivities have been identified on the site. This includes any significant European Protected Species populations or viable, relatively undisturbed areas of semi-natural habitat...”

Of particular concern is this statement has been the result of desk top analysis only. We would expect the SR to include an initial walk over survey of all the site to inform habitat and species assessment. We also expect a walkover bird survey to have been undertaken to inform this report. The result is that this level of information does not provide sufficient data for us to form a clear opinion on species, habitats and survey methodologies to be included in the resulting ES.

5.2.4.3 Species

Mammals

The list of mammals would appear to relate only to those found in the desk top exercise. SNH strongly advises survey is also undertaken for pine marten. Reference needs to be made to the various levels of protection afforded these species, of particular note are those with European protection that is, European Protected Species (EPS) such as, otters and bats.

Birds

The list of bird species that appear to be targeted suffers from lack of an initial walk over survey and other initial work to identify the target species. We cannot comment further without this data and draw the applicant's attention to the guidance on SNH's web site, this clarifies what information is suitable for a SR and why we believe this is necessary. The document is titled '*Guidance: Survey Methods for use in Assessing the Impacts of Onshore Windfarms on Bird Communities*' and the link is; <http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/windfarm-impacts-on-birds-guidance/>

Of immediate concern is lack of any reference to survey for goshawk, nightjar and black grouse and woodland birds in general. However there are other species which may emerge from initial survey as described in the guidance as advised above.

Amphibians and reptiles

While there are no records of great crested newts in this area, as we have pointed out reliance on desktop information does not give a complete picture. Because great crested newts are an EPS, the EIA should include assessment of the capacity of the habitat to host great crested newt and if necessary include results of survey if it is required.

5.2.5 Potential Effects and Ecological Sensitivities

5.2.5.1 Potential Effects

One key effect particularly at this site which is extensive and covers a variety of habitats is the potential cumulative impacts on species such as bats, otters and bird. We strongly recommend the EIA addresses cumulative impacts on sensitive species.

5.2.5.2 Ecological sensitivities

The SR states: "... No significant ecological sensitivities have been identified on the site. This includes any significant European Protected Species populations or viable, relatively undisturbed areas of semi-natural habitat..."

This is of great concern given only desk top analysis has been undertaken. Confidence in the conclusions of any EIA will be reduced if the scope of the EIA is based purely on the data presented in this scoping report . We strongly advice our guidance noted in this letter is followed, particularly in respect of assessing the impacts of onshore windfarms on bird communities.

5.2.5.3 Designated sites

The SR states:

“...accordingly, the development of the wind farm is very unlikely to have any significant, direct impact upon the surrounding, designated sites and features...”

As noted above several SSSI within 9km are omitted from the list of sites which could be affected by the proposal this includes an SSSI which is actually within the development boundary; Knockgardner SSSI

5.2.5.4 Habitats

The SR records habitats as identified from purely desktop survey. We agree an accurate Phase 1 survey is undertaken to inform both the habitat resource and also the suitability of the area to host a range of species. We note the comment in this SR about the use of Ayrshire Joint Planning Unit Phase 1 maps:

“...Some apparent errors are evident in the habitat data available from the Ayrshire Joint Planning Steering Group website, such as the extremely unlikely, widespread occurrence of improved grassland across the summits of the hills to the northeast of Linfairn...”

Without knowing exactly what area of high ground is referred to, we offer the following comment. On our examination of AJPU's maps we found no such problem and the hill top areas **within** the proposed windfarm boundary. These appear to be correctly coded as either acid grassland, dry heath, dry modified bog or bracken. However as the steading known as Linfairn is on the eastern side of what appears to be the proposed windfarm area, we are not sure what hill tops are referred to here. The hill tops to the **northwest** of Linfairn area named as Cawin Hill or Black Hill of Knockgardner and the phase 1 codes here appear to be appropriate. However it is the case that the Phase 1 codes for the hill tops outside what appears to be the development area to the northeast of the steading of Linfairn are for improved grassland and this does appear to be incorrect. For the avoidance of doubt these hill tops are known titled Doonans Hill, Craig Hill and Trostan Hill.

This uncertainty of the SR is caused by lack of adequate maps for the SR and information on habitats which we would expect to be presented at this stage to allow us to form a useful opinion of the scope of the EIA.

We note the habitats recorded from the desk top exercise include peatland. Our records also indicate areas of peat over 0.5meters over much of the site including within the afforested areas. In relation to peat or carbon soils, new guidance is available to allow better understanding of the impacts of windfarms on carbon soils. We advise where such soils are encountered, you assess the impact or scale of peat loss using Scottish Government guidance which found on SNH's website: [Site Surveys for Developments on Peatland](#). This is part of Scottish Government guidance '**Wind Farms and Carbon Savings on Peatlands**' which presents a method to calculate carbon emission savings associated with wind farm developments on Scottish peatland'. <http://www.scotland.gov.uk/Topics/Business->

[Industry/Energy/Energy-sources/19185/17852-1/CSavings](#). We also advise that such a calculation of carbon emission through disturbance to peat or carbon soils is undertaken to inform the EIA.

We welcome the proposal to produce a habitat management plan (HMP). SNH does point out however, all of the country is subject to a degree of physical disturbance from agricultural or forestry activities such as drainage and stock grazing including national important areas. Such activity should not be the reason to conclude that ecological value of such areas is limited. The proposals are not of agricultural nature and present the area with far greater damage to the natural heritage value. SNH advises that any HMP should include compensation for this more severe damage and this should be in areas free from the influence of the turbines and infrastructure. The ES should include clear indication of off site compensation proposals to reduce the impact of the development on all habitats particularly peatland and forestry.

In this regard SNH draws your attention to SG policy on the control of the removal of Woodland and advises that ES includes proposals to ensure the project adheres to this policy. We advise that if not already consulted Forestry Commission Scotland is consulted on these proposals.

5.2.5.5 Fauna

In relation to survey methods the Report suggests the following:-

“..These surveys can, up to a point, be undertaken by a single, experienced surveyor on a single visit. However, additional activity surveys will be required for bats and further survey may also be required for any significant population of the remaining species that is located on or adjacent to the site...”

We expect that survey effort will be commensurate with the importance of the population and protection afforded the species targeted. As no assessment of species present through an initial site walkover is presented, we conclude the proposed survey outline is inadequate for the purposes of informing the ES and identifying impacts, potential mitigation and /or compensation for adverse impacts.

All surveys for protected species should follow SNH guidelines or other recognised methodologies. This SR gives us no confidence this will be the case and we would appreciate further information from the developer on what species will be focussed on in the ES and what survey methods will be followed, the timings, effort used and extent of ground to be covered or ‘study area’. The EIS should include information on constraints in undertaking surveys in optimum conditions.

As recorded above, reliance on desk top information has the potential to greatly underestimate the species present. In this regard we believe some important species are omitted from the list in this section such as pine marten. We cannot confirm if the list is adequate until information from on site and from local experts such as Ayr River Trust is available.

Ornithology

The EIA must include bird surveys as per SNH guidance including bird collision risk assessment if this is necessary.

We cannot comment on the methodology noted here or on the species selected as target species without the background information normally included in a scoping report as described in our guidance at para 32 noted below:

“... 32 Although existing bird survey data are invaluable, these are no substitute for the collection of novel data contemporaneous with the proposal, as bird distributions can change. For many areas there may often be no existing data on the bird interest, especially for some seasons (e.g. winter or migration). The absence of any data does NOT indicate that there is no interest which needs to be assessed; rather the absence of existing data heightens the need for novel information. To supplement or improve the knowledge base **at scoping**, ‘full’ or ‘scaled down’ versions of standard survey and observation methods should be employed as a ‘reconnaissance survey’. Only in exceptional cases, where reliable and recent sources of other information are available, will reconnaissance survey be unnecessary...”

Fish

The SR states:

“..None of these watercourses are notable for their salmon or sea trout populations, for example, so it is therefore unlikely that specific fish or freshwater invertebrate surveys will be required. However this should be clarified with the relevant Fisheries Board and/or SNH...”

If this conclusion is a result of desk top survey SNH would strongly suggest fish survey work in undertaken to confirm this conclusion and contact made with Ayr Rivers Trust.

APPENDIX A: LVIA METHODOLOGY

Determining Significance

Table 17 (Appendix A): Significance of Impact

This appears to differ from the table presented in para 1.4 of the main part of the SR and this assessment appears more satisfactory. However we cannot agree the outcomes indicated in this table due to the basis used for identifying the significance of impacts in relation to landscape value. This is described in Table 15 (Appendix A): Criteria for Assessing Landscape Value’ this table includes several references to ‘Areas of Outstanding Natural Beauty’ (AONB) this is not a term used to describe landscape value in Ayrshire. Any EIA should use local designations to determine the significance of impacts.

APPENDIX 2

SNH POLICY AND GUIDANCE FOR WIND FARM DEVELOPMENT

The renewables pages of SNH's website are a useful source of information and they provide all our relevant policy and guidance in respect of onshore windfarm development. Go to www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/ in the first instance and from there you can navigate to the key guidance some of which is listed below.

Renewable Energy Service Level Statement (2010) – the Service Level Statement (SLS) has been prepared (and updated in May 2010) to clarify the stages at which SNH can be expected to input into the process of developing and consulting upon renewable energy proposals and the level of advice that we will offer at each stage. This statement is intended to guide the interaction between SNH, developers, and consent authorities in the process of developing a renewables project.

Strategic Locational Guidance for Onshore Windfarms (2009) – this policy guidance (updated in March 2009) sets out a number of principles to guide the location of onshore wind farms so as to minimise their effects on the natural heritage. It provides SNH's broad overview of where there is likely to be greatest scope for wind farm development, and where there are the most significant constraints, in natural heritage terms.

Guidelines on the Environmental Impacts of Windfarms and Small Scale Hydro Electric Schemes, SNH (2002);

Cumulative Effect of Windfarms (2005) – this guidance is important to consider in situations where your proposal is in proximity to existing or consented wind farms, or those that are submitted as planning applications. It addresses cumulative landscape and visual impacts (please see Appendix 5 in particular) and also cumulative impacts in respect of birds. *Please be aware that this guidance is currently being updated.*

Survey Methods for Use in Assessing the Impacts of Onshore Wind farms on Bird Communities (2005) – this guidance sets out how to scope and plan your impact assessment in respect of bird interests. It also provides the survey methodologies to use dependent on the bird species potentially affected, as well as providing advice on the variety of potential effects. **Note that other guidance in respect of bird interests is available on the SNH website, including how to assess the significance of impacts, as well as how to undertake collision risk modelling (if this is needed).**

Visual Representation of Wind Farms: Good Practice Guidance (February 2007) – this Good Practice Guidance focuses upon Visual Impact Assessment – the process by which the potential significant effects of a proposed development on the visual resource are methodically assessed. This is only one element of the overall Landscape and Visual Impact Assessment (LVIA), part of the wider process of Environmental Impact Assessment (EIA). Please note, that while the text is available on the

website, hard copies of this guidance will need be purchased from SNH publications and should be referred to for the larger illustrations.

Siting and Designing Windfarms in the Landscape (December 2009) – helps to guide windfarms towards those landscapes best able to accommodate them and advises on how windfarms can be designed to best relate to their setting and minimise landscape and visual impacts. This guidance replaces in parts our earlier publication – “Guidelines on the Environmental Impacts of Wind farms and Small Scale Hydroelectric Schemes” (2001).

Our site has information on best practice survey methods for a range of legally protected species such as otters; ‘**Otters and Development**’, ‘**Badgers and Development**’ as well as links to BTO publication ‘**Bat Surveys Good Practice Guidance** and information on water vole, red squirrel etc survey guidance. We expect best practice as described in these publications to be followed to inform the ES and aid decisions on the proposed application.

To assess the impact or scale of peat loss using Scottish Government guidance which found on SNH’s website: [Site Surveys for Developments on Peatland](#). This is part of Scottish Government guidance ‘**Wind Farms and Carbon Savings on Peatlands**’ which presents a method to calculate carbon emission savings associated with wind farm developments on Scottish peatland’.

APPENDIX 3

LEGAL REQUIREMENTS: EUROPEAN PROTECTED SPECIES

European Protected Species

European Protected Species (EPS) are given protection under the Conservation (Natural Habitats &c.) Regulations 1994 (as amended). This means it is illegal to:

- deliberately kill, injure, disturb or capture/take European Protected Species
- damage or destroy the breeding sites or resting places of such animals

It does not have to be deliberate, reckless or intentional for an offence to have been committed. Where it is proposed to carry out works which will affect EPS or their shelter/breeding places, whether or not they are present, a licence is required from the licensing authority. Further information on bats and development can be found in the former Scottish Executive document *European Protected Species, Development Sites and the Planning System: Interim guidance for local authorities on licensing arrangements* (October 2001) via the Scottish Government publications website:

- <http://www.scotland.gov.uk/library3/environment/epsg.pdf>

As highlighted in the Interim Guidance, three tests must be satisfied before the licensing authority can issue a licence under Regulation 44(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) to permit otherwise prohibited acts. An application for a licence will fail unless all of the three tests are satisfied. The three tests involve the following considerations:

- **Test 1** - The licence application must demonstrably relate to one of the purposes specified in Regulation 44(2) (as amended). For development proposals, the relevant purpose is likely to be Regulation 44(2)(e) for which Scottish Government is currently the licensing authority. This regulation states that licences may be granted by Scottish Government only for the purpose of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment."
- **Test 2** - Regulation 44(3)(a) states that a licence may not be granted unless Scottish Government is satisfied "that there is no satisfactory alternative".
- **Test 3** - Regulation 44(3)(b) states that a licence cannot be issued unless Scottish Government is satisfied that the action proposed "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" (Scottish Government will, however, seek the expert advice of Scottish Natural Heritage on this matter).

Consideration of European protected species must be included as part of the planning application process, not as an issue to be dealt with at a later stage. Any planning consent given without due consideration to these species is likely to breach European Directives with the possibility of consequential delays or the project being halted by the EC.

4. DIRECTORATE FOR THE BUILT ENVIRONMENT

Section 2.1.2 of the Scoping Report covers National Planning Policy and makes reference to the National Planning Framework (NPF2), Scottish Planning Policy, Planning Advice Notes, development plans and supplementary planning guidance. The Scoping Report also refers to relevant PANs in Section 5.

The scoping report does not include reference to Circular 3/2011 or PAN 1/2011. I suggest the following comments:

- In preparing the EIA regard should be had to Circular 3/2011 - The Town and Country Planning (Environment Impact Assessment) (Scotland) Regulations 2011.
- In preparing the noise section of the EIA, regard should be had to PAN 1/2011 'Planning and Noise'.

Section 2.12 covers Development Plan Policy, but does not mention the South Ayrshire Local Development Plan. South Ayrshire Council is currently in the process of preparing a Proposed Local Development Plan, which is currently programmed for public consultation in May 2012. The developer should contact South Ayrshire Council in order to take account of what stage they are at in the Local Development Plan, so that this can be reflected in the EIA, where appropriate.

5. FORESTRY COMMISSION SCOTLAND

Woodlands

The Scoping Report prepared for the developer Sgurr Energy Ltd (February 2012) indicates the proposed site boundary on **Figure 1 – Site Location**. This plan describes a site boundary that encloses an afforested area around Glenalla Fell and Clauchrie Hill, which also dovetails with the national forest estate forest to the south and south-west of the site boundary.

3. Description of Proposed Development describes a development that may comprise 25 wind turbines, together with associated infrastructure including site access tracks, substation, temporary construction compounds and a meteorological mast. Although it is recognised that part of the site is currently afforested there is no mention of the developer's strategy for those trees, such as all trees within the site boundary area being clearfelled or for the development to be 'keyholed' into the forest with the retention of a matrix of forest cover.

Forestry Commission Scotland's view is that in the preparation of an ES the developer should make clear all the potential direct and indirect effects the wind farm development proposals will have on the forest within the site boundary, and effects on the forest areas on the immediate boundary of the development. Such an assessment should consider the following:

Woodland removal

Internationally there is now a strong presumption against deforestation (which accounts for 18% of the world's greenhouse gas emissions). Reflecting this, Scottish Ministers have now approved a policy on [Control of Woodland Removal](#) (refer *Scottish Planning Policy* paragraph 148) which seeks to protect the existing forest resource in Scotland, and supports woodland removal only where it would achieve significant and clearly defined additional public benefits. In some cases, including those associated with development, a proposal for compensatory planting may form part of this balance.

The criteria for determining the acceptability of woodland removal and further information on the implementation of the policy is explained in the *Control of Woodland Removal Policy*. These should be taken into account when preparing the development plans for this wind farm proposal. The developer should also be aware of the [National Planning Framework 2](#) and specifically paragraph 93 which reiterates Scottish Government determination to decrease the loss of existing woodland and aspiration for further expansion.

The ES should consider all options for the installation of such a wind farm, including alternative sites, alternative wind turbine and infrastructure locations that remove or minimise the necessity for tree removal, and wind turbine specifications that can perform efficiently within a woodland environment.

The ES should indicate proposed areas of woodland for felling to accommodate new turbines and other infrastructure such as roads. Details of the area to be cleared around those structures should also be provided, along with evidence to support the proposed scale and sequence of felling.

The ES should also detail any trees or woodland areas likely to be indirectly affected by the proposed development (e.g. through changes in hydrology, loss of neighbouring plantation causing instability, etc) and provide full details of alternatives and/or protection and mitigation measures in the ES.

The developer should consider the wildlife implications of any tree felling in the relevant sections of the ES. The ES should also consider any impacts of forestry activities on the water environment, with particular attention paid to acidification and nutrient leaching. The applicant should make full use of the *Forests and Water Guidelines* in proposing forestry activity and mitigation procedures.

If timber is to be disposed of on site, details of the methodology for this should be submitted. Areas of retained forestry or tree groups should be clearly indicated and methods for their protection during construction clearly described.

If areas of woodland are to be temporarily removed but then replanted shortly afterwards (typically within 1-5 years) this should be indicated in the ES, and details of the replanting plan provided.

Where there is a change in land use (e.g. to non-woodland habitats) the woodland should be described in sufficient detail (e.g. including details of the age of the trees; the species type and mix; the soil types; any particular natural heritage designations or protected species present in the woodland; and the landscape and historical environment context) to enable its intrinsic public benefit value to be assessed. This will facilitate decisions on whether woodland removal is acceptable and if so, whether compensatory planting will be required.

The developer should refer to guidance documents issued by the Forestry Commission in relation to good forestry practice and associated environmental issues.

In summary, the developer should consider their response to the *Control of Woodland Removal Policy*, including the consequences of such removal on carbon sequestration and mitigating the potential effects of climate change.

Forestry Commission Scotland can advise on all aspects of woodlands and forestry associated with developments and early consultation with them to clarify proposals and any particular restrictions or conditions on woodland

removal that may apply to the area is recommended. Contact details of the nearest Forestry Commission Conservancy office are at the end of this note or can be accessed at: www.forestry.gov.uk or from fcscotland@forestry.gsi.gov.uk.

Forest and woodland ecology

The *Scottish Forestry Strategy* (SFS) (2006) and *Scottish Biodiversity Strategy* (both of which have Ministerial endorsement) and *Nature Conservation (Scotland) Act 2004* should be essential documents that the developer should be aware of.

The SFS recognises the importance of native woodlands, especially those that are of ancient and semi-natural origin. It also incorporates targets for priority habitats and species, sets priorities for action in terms of improving the management of semi-natural woodlands, and extending and enhancing native woodlands by developing forest habitat networks (page 48).

The SFS also recognises the potential for well designed productive forests to contribute environmental benefits through the restructuring process and future management systems, such as habitat and landscape value from increased open space (page 48).

The SFS also identifies and promotes the importance of sustainable forest management as an essential contributor to the conservation of soils, the quality of water and air (page 44), and the general contribution that forests and woodlands can make to tackle climate change.

The *Scottish Biodiversity Strategy* contains delivery of targets for priority habitats and species as key aims as well as enhanced management of whole landscapes for biodiversity, including reducing fragmentation of habitats. This strategy has been designated by Ministers under the terms of the *Nature Conservation (Scotland) Act 2004*, to confirm that all public bodies have a duty to further biodiversity where consistent with their functions, in ways which are guided by the strategy.

This would suggest that the developer should be obliged to carry out an assessment of the implications of the wind farm proposals on biodiversity. This should be in both general terms of effects on the biodiversity strategy aims, and specifically the impacts on priority habitats and species; i.e. those with national targets (*HAPs* and *SAPs* identified in the *Biodiversity Action Plan*).

It would also suggest that the developer should be obliged to carry out an assessment of the implications of the wind farm proposals on water, soil and air resources, and an appreciation of the potential consequences of the loss of woodland cover with regards climate change, specifically carbon sequestration.

Consultation with the local Forestry Commission Scotland Conservancy should also be undertaken during the development of proposals for the

planned restructuring and/or woodland removal to accommodate the wind farm proposals.

Regards the FC *Forest and Water Guidelines* please note that this publication is now in its 5th Edition, published 2011 with the revised UKFS and suite of Guidelines.

Landscape and visual assessment

The new *UK Forestry Standard* and associated *Forests and Landscape UKFS Guideline*, FC Forestry Practice Guide: *Forest Design Planning – A Guide to Good Practice*, The *Scottish Forestry Strategy 2006* and SNH suite of *Landscape Character Assessments* should all be on the list of documents that the developer should be aware of. All are free to view and download from FC and SNH web-sites.

The *Scottish Forestry Strategy* identifies that forests and woodlands contribute to Scotland's diverse and attractive landscape. It promotes the benefits of well designed and managed woodlands that reflect local landscape character, and that their contribution to the wider landscape should help Scotland meet the undertakings of the *European Landscape Convention* (page 44).

The Scoping Report should promote a full assessment by the developer of all the landscape and visual issues. This should include a full description of the general landscape character within which the developer proposes to introduce the wind farm, and a statement of the landscape and visual sensitivities that may be potentially affected by that development.

It should also include an assessment of the cumulative landscape and visual impacts affecting the wind farm proposal, and identify relevant criteria that may have a bearing on that assessment.

The *UK Forestry Standard* sets out the criteria and standards for the sustainable management of all forests and woodlands in the UK. Landscape is a specific *Criteria for Sustainable Forest Management* (page 18) and the two *Forest Management Unit Indicators* as evidence that landscape quality is enhanced are:

- Landscape principles of forest design are used;
- Cultural and historical character of countryside is taken into account when...making changes to existing woods.

The new FC *Forests and Landscape UKFS Guideline* provides an essential introduction to both the appreciation of the established principles of forest design and appraisal of the landscape with regard to appreciating its local character.

Of forest landscape design, the principles and process of restructuring an existing forest are described in the aforementioned FC Forestry Practice Guide: *Forest Design Planning – A Guide to Good Practice*. Not only should a design plan consider how best to clear fell the forest for the wind farm development, but also describe how the remaining woodland elements

beyond the scheme boundary (specifically, the forest to the south and south-west of the site boundary that is integral to the forest within the boundary) can be best integrated with the development site. Such integration could be achieved, for example, by the selective restocking of strategic areas within the wind farm site area.

Regards landscape character, the *Scottish Forestry Strategy* specifically advocates the use of Scottish Natural Heritage's suite of *Landscape Character Assessments*, which provide valuable descriptive information about the landscapes of Scotland. The potential removal of the existing forest within the wind farm proposal area may create significant areas of open ground (that is, ground without woodland cover) that may affect the contribution of the proposed site to local landscape character.

We would advise that when forest landscape design is being considered as part of the forest management associated with such a development, a chartered Landscape Architect with a comprehensive knowledge of forestry should be commissioned.

Historic environment of forests and woodlands

The developer should recognise the wider aspects of the wind farm proposals on historic environment policies. In terms of forests and woodlands, besides the legacy of the past to be found within woodlands, the cultural heritage of ancient woodlands and veteran trees are particularly important. The value of the historic environment in woodlands is recognised in the new *UK Forestry Standard* and *Forests and Historic Environment UKFS Guideline*, the *Scottish Forestry Strategy* (SFS) (page 45) and FCS Policy Statement *Scotland's Woodlands and the Historic Environment*.

The SFS not only identifies the duty to safeguard evidence of the historic environment but also encourages their active management, enhancement and interpretation. Reference should also be made to the additional guidance available on the FCS web-site historic environment page.

Management Plan

With regards both ecological and landscape considerations for the site and immediate environs, we would advocate the preparation of a long-term management plan.

This should be carried out in consultation with FCS, Local Authority, SNH, landowners and other interested parties. Essentially what is required is an integrated land-use and management plan that fosters optimising the ecological and landscape benefits of both the wind farm site and neighbouring land uses.

Environmental Statement

Please note that should this application proceed to the preparation of an Environmental Statement this should be sent to:

Conservator
South Scotland Conservancy
55/57 Moffat Road
Dumfries
DG11NP

The Conservancy are also happy to partake in pre-scoping discussions should these contribute towards the developer's appreciation of the potential implications of proposing a wind farm within and/or adjacent to a woodland.

6. HISTORIC SCOTLAND

As you may be aware, we had previous engagement with the developer for a 25 wind turbine scheme in this location and provided some provisional comments (our case ID 201105274). This letter provides an updated response based on the information contained in the scoping report.

Our comments concentrate on our statutory remit for scheduled monuments and their setting, category A listed buildings and their setting and gardens and designed landscapes appearing in the Inventory. South Ayrshire Council's conservation and archaeological services will also be able to advise on the likely impacts from the development on the historic environment. This includes potential impacts from the scheme on those cultural heritage features mentioned above, unscheduled and unknown archaeology, B and C(S) listed buildings, non-Inventory designed landscapes and conservation areas.

Our view on the principle of the proposal

The development proposal comprises up to 25 wind turbines to a maximum height to blade tip of 126.5m and associated infrastructure. Without prejudice and on the basis of the information supplied we can indicate at this stage that while a development of this nature and scale in this location does not appear to raise significant issues for our historic environment interests, we would however wish certain aspects of the proposal to be assessed. Further advice about this is given below. Notwithstanding this, please note that our comments here are provisional and we would need to see any Environmental Statement (ES) to give our final view on the proposals.

Potential impacts to be considered

Direct impacts (e.g. proposals which directly impact on scheduled monuments, category A listed buildings and gardens and designed landscapes appearing in the Inventory) and indirect impacts (e.g. those proposals impacting upon on the way in which the surroundings of a cultural heritage feature contribute to how it is experienced, understood and appreciated) should be assessed in any ES to be produced for the development proposal. All elements of the development as well as any works associated with it should be planned to avoid adverse direct and indirect impacts on these features.

Since we issued our response to the developer, we have updated our website to provide general information on a number of issues the developer may find helpful. This includes our role in the Environmental Impact Assessment (EIA) process, advice about pre-application consultations and general recommendations about the scoping exercise and ES, such as how far any area of search should extend to, the assessment of impacts, what should be included in the cultural heritage chapter and what visualisations should be included. It also includes information on policy and guidance, with links to the *Scottish Planning Policy* (2010), the *Scottish Historic Environment Policy* (2011) and our *Managing Change* setting guidance: <http://www.historic-scotland.gov.uk/index/heritage/policy/environmental-assessment/eiafaqs.htm>

While the scoping exercise should assess impacts on all historic environment features in the vicinity, we suggest that it specifically focuses on the following:

- Knockinculloch, enclosures on E slope of, 600m NW of Glenalla (Index No. 3357)
- Blairquhan House (HB Num 19094) and its associated Inventory designed landscape
- Kilkerran House (HB Num 1114) and its associated Inventory designed landscape
- Craigengillan (HB Num 18793) and its associated Inventory designed landscape
- Bargany House (HB Num 1171) and its associated Inventory designed landscape

Comments on the scoping report

The scoping report suggests that while the wind farm has a design life of 25 years, this would be treated as a permanent but reversible impact on the setting of historic environment sites. We would note that given that such a development is likely to be in use for at least 25/30 years with a possible renewal beyond that date, we do not consider this to be appropriate mitigation on potential impacts on cultural heritage features. In addition, the developer should note that the Scottish Historic Environment Policy (SHEP) has recently been updated. It can be accessed via the above link.

In summary, we would be keen to engage in further consultation with the developer to discuss layout, design and mitigation. For example, we would welcome any opportunity to minimise any potential significant impacts on Blairquhan House (HB Num 19094) and its associated Inventory designed landscape if the turbine layout has remained unchanged from our previous involvement with the case. As it is unclear at this stage how significant impacts might be on these features, we recommend that wireframes and photomontages are produced from the above viewpoints and would particularly welcome sight of these prior to the submission of any forthcoming ES/planning application. The potential cumulative impact should also be considered given the proposed and consented wind developments in the area.

Thank you for allowing us to provide some further comments on the above development proposal. The comments contained in this letter relate to the visualisations (e.g. ZTV and wireframes) provided with the consultation which were not available to view when we issued our initial scoping opinion response on 16 March 2012.

Blairquhan Inventory designed landscape

According to the ZTV, between 7 and 25 turbines may be visible from the Blairquhan designed landscape and we have concerns about the potential significant impact on it. I welcome the submitted wireframe taken from just south of Cloncaird castle as it may be useful in assessing views across the designed landscape. However, this viewpoint may not fully illustrate the impact of the development on the designed landscape. According to the Inventory, the best views of the house and park are obtained from the north, and the wind farm may be visible in these views as it is located approx 1.5 km to the south of the designed landscape. The 3 mile long north drive is an important feature of the design and follows the route of the river Girvan, with its dramatic gorge and waterfalls. After 2 miles as the drive continues southwards towards the castle, the view opens out to reveal the castle with the hills behind with the memorial obelisk in memory of Colonel James Hunter Blair MP set on the summit of Craigenpower (Highgate Hill) to the SE. As the wind farm may be visible in this important view of the Castle and its designed landscape, we would therefore recommend that a photomontage showing this view of the castle is produced.

Kilkerran Inventory designed landscape

According to the ZTV, between 1 and 12 turbines may be visible from the designed landscape and we have some concerns about the potential significant impact on it. The policies are located on the southern edge of the Water of Girvan valley, with the moorland hills rising to 1000 feet to the south and forming an important backdrop to the designed landscape. According to the Inventory, there are extensive views from the valley across the open parkland towards the house with the hills behind, especially from the B741. The wind farm may therefore be visible in this important view. While we welcome the wireframe taken from the east of the designed landscape, we would also recommend that a photomontage showing the view of the house in its designed landscape setting from this road is produced.

We would welcome sight of these visualisation prior to the submission of the ES and planning application.

7. MARINE SCOTLAND

Marine Scotland Science Freshwater Laboratory (MSS-FL) provides scientific advice on migratory and freshwater fish in Scotland to allow the Scottish Government to protect and promote the development of sustainable fisheries.

Wind farm and transmission line proposals which are considered under Section 36 and 37 of the Electricity Act may adversely affect water quality and

fish populations through a number of mechanisms. These include: increased sediment transport and deposition; pollution incidents; altered hydrological pathways; removal or degradation of fish habitat, including spawning areas; reduction in food supply and obstruction to upstream and downstream migration of fish, all of which should be fully addressed in the Environmental Statement (ES).

Atlantic salmon, trout (sea trout and brown trout) and European eel are of particular interest to MSS-FL. Fish and fisheries issues will also be of concern to the local District Salmon Fishery Boards (DSFBs), which have a statutory responsibility to protect salmon populations. As such this organisation should also be contacted at the outset of any development. In addition to the DSFBs, local Fisheries Trusts have information regarding local fish populations. The following web sites have lists of all DSFBs and Fisheries Trusts in Scotland:
http://www.asfb.org.uk/members/about_the_boards.asp
<http://www.rafts.org.uk/members/members.asp>.

The developer should also note that fish and fisheries issues are also likely to be of concern to Scottish Natural Heritage (SNH) when species of conservation interest are involved (see <http://www.snh.gov.uk/about-scotlands-nature/species/fish/freshwater-fish/>) and to the Scottish Environment Protection Agency (SEPA) due to their role in ensuring compliance with the requirements of the Water Framework Directive.

Environmental Statement

In preparation of the ES careful consideration should be given to the following activities which can have an impact on fisheries: turbine foundations, excavation of borrow pits, road construction/upgrading, cable laying, water abstraction and discharge.

Water bodies and stream crossings

It is recommended that construction avoids water bodies wherever possible. If construction is to be carried out near watercourses, a buffer zone of at least 50m should be established. Where river crossings are proposed the Scottish Executive guidance “River Crossings and Migratory Fish” (2000) www.scotland.gov.uk/consultations/transport/rcmf-00.asp should be consulted in addition to SEPA’s “Engineering in the Water Environment Good Practice Guide Construction of River Crossings” (http://www.sepa.org.uk/water/water_regulation/guidance/engineering.aspx).

Peat stability

Peat slides can have a direct impact on fisheries and peat disturbance can have indirect effects on water quality, therefore all construction should avoid areas of deep peat, where this is not possible appropriate mitigation measures should be put in place. Natural peat drainage channels should be preserved throughout the development; excavated material should not be stock piled in areas of unstable peat; concentrated water flows onto peat slopes should also be avoided.

Abstraction and discharge of water

SEPA, through The Water Framework Directive, regulates abstraction from and discharge of polluting matter to all wetlands, surface waters and groundwaters. (SEPA-The Water Environmental (Controlled Activities) (Scotland) Regulations 2005 A Practical Guide http://www.sepa.org.uk/water/water_regulation.aspx). Where water abstraction is proposed, the developer should ensure that they comply with The Salmon (Fish Passes and Screens) (Scotland) Regulation 1994 which states that screens, at the point of water abstraction, should serve to prevent the entry and injury of salmon. <http://www.legislation.gov.uk/ukxi/1994/2524/regulation/6/made>.

Surface water run-off must be discharged in such a way to minimise the risk of pollution of the water environment.

Pollution

The Water Framework Directive requires any activity that is liable to cause water pollution to be authorised by SEPA. This includes point source pollution (eg sewage and trade effluent) and diffuse pollution (fuel, concrete spills, sediment discharge) all of which can be detrimental to the survival of fish see SEPA Pollution Prevention Guidelines

<http://www.netregs.gov.uk/netregs/links/107968.aspx>

Acidification

Particular attention should be paid to acidification issues if they are known to be a problem in the area. Anthropogenic acidification of freshwaters is largely caused by the input of sulphur and nitrogen compounds, derived from the combustion of fossil fuels, exceeding the buffering capacity of the soils and underlying rocks through which the streams flow. Peat deposits and marine derived sulphates can also contribute to acidity. Salmonid fish are particularly sensitive to acid water, particularly due to the increased mobility of labile aluminium in acid conditions which is toxic to aquatic organisms.

Forestry

The developer should be aware of the potential impacts of tree felling on the aquatic environment including nutrient release, increased acidification risk, loss of habitat, impacts on hydrology, increased fine sediment transport and deposition, all of which can have a detrimental impact on fish populations and should therefore be addressed in the ES. "The Forest and Water Guidelines" should be consulted for further information

<http://www.forestry.gov.uk/newsrele.nsf/WebPressReleases/7FFA36CBBFD7811080256E14004CE112>

Monitoring Programmes

In order that MSS- FL can assess the potential impact of developments the developer should provide information on all species and abundance of fish within the development area. MSS- FL may not have local knowledge of the site and consequently the onus is on the developer to provide adequate information on which to base an assessment of risk.

Where local salmonid and eel populations are present and the development has the potential to have an impact on the freshwater environment MSS FL requests that a baseline study be carried out at least one year prior to construction to assess all species and abundance of fish and water quality in standing and running waters likely to be affected by the proposed development. Particular attention should be paid to species of high economic and/or conservation value as outlined below:

Atlantic salmon, sea lamprey, river lamprey and brook lamprey are listed under the European Habitat Directive. Atlantic salmon, trout (ancestral forms and sea trout), European eel, river lamprey, sea lamprey and Arctic charr are UK Biodiversity Action Plan (UKBAP) species-listed as priorities for conservation. European eel is also protected by EU regulation (EC No 1100/2007). The following links provide further information regarding the protection of fish species and water bodies in Scotland.

http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_species.asp

http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_list.asp?Country=S

<http://www.jncc.gov.uk/page-5164>

http://www.nasco.int/pdf/far_habitat/HabitatFAR_Scotland.pdf

Although MSS-FL will be primarily concerned with species of fisheries interest (e.g. salmon, trout and eels), other consultees will have an interest in other species.

Adherence to best available techniques is expected throughout the development. Site specific mitigation measures and/or enhancement programmes to protect and/or compensate freshwater habitats should always be included in the ES.

Monitoring throughout the development phase should be carried out to identify impacts and allow remediation at the earliest opportunity for sites where there are thought to be risks to fish populations. The experimental design of the monitoring programme should focus on the risks presented by the development and be clearly justified. Methods of analysis, reporting mechanisms and links to site management should also be clearly identified. Developers should ensure that all fish work complies with the Animal (Scientific Procedures) Act (1986) where required (<http://apc.homeoffice.gov.uk/aboutapc/ourwork.htm>). The following publication may be helpful in considering fish monitoring programmes; http://www.scotland.gov.uk/Uploads/Documents/SFRR_67.pdf.

The combined effect of all existing and proposed construction developments in the area should be addressed in the ES in addition to angling, as a

recreation interest, and the impact that the proposed development may have on it.

Where the development can be clearly demonstrated to be of low risk to fish populations the developer should still draw up **site specific** mitigation plans to minimise any impact to fish and their inhabiting waters. If the developer considers that there will be no significant impact from the development and as such no monitoring will be required this should be clearly presented in the ES with supporting data and information thereby enabling MSS-FL to finalise the decision on monitoring requirements. If this information is not provided, MSS-FL will have no information on which to base an assessment of risk and as such will recommend that the developer carry out a full monitoring survey of fish and water chemistry in addition to appropriate mitigation plans.

Summary

- MSS-FL provides scientific advice on fish and fisheries in Scotland to protect fish populations and promote sustainable fisheries.
- Other organisations including DSFBs, Fishery Trusts, SNH and SEPA also have an interest in fish and fisheries issues.
- Energy developments can impact fish populations through a wide range of mechanisms that need to be considered in the ES.
- It is the responsibility of the developer to provide data on the distribution, species and abundance of fish within and around the development site to allow MSS-FL to assess levels of risk from the proposed development.
- It is the responsibility of the developer to provide a clear and honest assessment of the risks posed to fish populations as a result of the proposed development.
- If there is any reasonable doubt as to the potential impacts a monitoring plan should be put in place to assess impacts and allow remedial action at the earliest opportunity.
- Monitoring plans should be clearly defined and justified and must tie into site management.

8. TRANSPORT SCOTLAND

No response.

9. ASSOCIATION OF SALMON FISHERY BOARDS

The ASFB represents the network of 41 Scottish District Salmon Fishery Boards (DSFBs) including the River Tweed Commission (RTC), who have a statutory responsibility to protect and improve salmon and sea trout fisheries. We work very closely with the fishery trust network and their representative body, RAFTS, who provide a research, educational and monitoring role for all freshwater fish.

ASFB & RAFTS act as a convenient central point for Scottish Government and developers to seek views on local developments. However, as we do not have the appropriate local knowledge, or the technical expertise to respond to specific projects, we are only able to provide a general response with regard to the potential risk of such developments to fish, their habitats and any dependent fisheries. Accordingly, our remit is confined mainly to alerting the relevant local DSFB/Trust to any proposal.

The proposed development falls within the district of the Girvan District Salmon Fishery Board, and the Ayrshire Rivers Trust. It is important that the proposals are conducted in full consultation with these organisations (see link to ASFB and RAFTS member DSFBs and Trusts below). We have also copied this response to these organisations.

Due to the potential for such developments to impact on migratory fish species and the fisheries they support, ASFB and RAFTS have developed, in conjunction with Marine Scotland Science, advice for DSFBs and Trusts in dealing with planning applications. We would strongly recommend that these guidelines are fully considered throughout the planning, construction and monitoring phases of the proposed development.

- [LINK TO ASFB/RAFTS ADVICE ON TERRESTRIAL WINDFARMS](#)
- [LINK TO DSFB CONTACT DETAILS](#)
- [LINK TO FISHERY TRUST CONTACT DETAILS](#)

10. BT

We have studied this wind farm proposal with respect to EMC and related problems to BT point-to-point microwave radio links.

The conclusion is that the wind turbine project indicated should not cause interference to BT's current and presently planned radio networks.

11. CAA AIRSPACE

Civil Aviation Authority Screening and Scoping Opinion for Wind Turbine Applications

The CAA regularly gets asked by Planning Authorities and Developers for its opinion on the Screening or Scoping of Wind Turbine Applications under the Environmental Impact regulations. In all cases the advice is the same and in the past the CAA has also advised applicants specifically which aviation stakeholders to consult. With increasing pressure on limited resources within the CAA this customised service is no longer viable. The following guidance is provided to enable applicants to identify the appropriate elements to include within the aviation section of any environmental report and how Local Planning Authorities should assess the information. Only in cases where the CAA is statutorily consulted under the Electricity Act or the Planning Act will it provide a specific response to the application or scoping request.

That said, if a Local Planning Authority (LPA) has **specific** questions relating to an application it is recommended that they contact the CAA using windfarms@caa.co.uk.

Screening Opinion

The CAA has no authority over the conduct of the planning process and hence it is the view of the CAA that the decision as to whether an applicant requires to submit an Environmental Impact Assessment rests solely with the relevant planning authority.

Scoping Opinion

When considering aviation effects, there are typically two aspects to consider; obstacles and electromagnetic impact including radar. Different aviation stake holders will be affected in different ways. Applicants should be made aware that several consultees act on a national basis and, therefore, leaving consultations until just before an application is submitted negates the purpose of the scoping process and will lead to delays.

Sometimes a developer or agent will claim that due to a development's small size, aviation is not an issue. This is not necessarily the case; indeed to date no evidence has been supplied to substantiate these claims and, for example, there are a number of instances where small wind turbines are detected by radar. Research is being undertaken to identify whether there is a set of dimensions and materials that would have no substantial impact.

Identifying Statutory Consultees

Both NATS (which provides En Route Air Traffic Control) and the Ministry of Defence (MoD) are statutory consultees under the Town and Country Planning Act. The impact on their infrastructure should be assessed within the Environmental Impact Assessment. The MoD currently provide a free service although demand is high leading to the need to allow sufficient time to respond, although this should be well within the timescales of other consultation requirements such as ecological or noise surveys. NATS provide a number of paid-for services and free self-assessment tools details of which can be found on their website. Both of these organisations need to be consulted in **all** cases.

There are also a number of officially safeguarded aerodromes which are defined in government circulars (listed at the end of this guidance). These may offer pre-planning services for which there may be a charge. Such aerodromes should have lodged safeguarding maps with LPA identifying the areas in which they need to be consulted. Due to the nature of their operations these areas may be in excess of 50km from the aerodrome.

Local Planning Authorities and applicants must note that if an objection is raised by any of the above, and consent is granted there is a possibility that the decision will be subject to 'call-in' by the Secretary of State or Scottish Ministers.

Identifying Non statutory Consultees

In addition to officially safeguarded Aerodromes there are several hundred other aerodromes in the United Kingdom. These may be Licensed or Unlicensed by the CAA. Associated Aerodrome Licence Holders or operators may have registered safeguarding maps with their LPAs. To verify the presence of aerodromes known to the CAA in any particular area, it is recommended that an aeronautical chart is purchased and the site of the turbine checked to see if it falls within the range of an aerodrome using the distances recommended in CAP 764. It is also recommended that Emergency Service Helicopter Support Units are consulted as they may operate in the area of concern and be affected by the introduction of tall obstacles. For example Police helicopters are permitted to operate down to 75 feet and will routinely follow main roads and motorways during their operations. Both the Police and Air Ambulance may need to land anywhere and will also have specifically designated landing sites.

Consideration of Electromagnetic Effects Including Radar and Radio Impacts

Almost uniquely among land developments wind turbines can be interpreted as moving objects by Air Traffic Control Radar. This can lead to impacts such as increased workload for Air Traffic Controllers, misidentification of tracks or loss of a genuine aircraft track, any of which could have safety implications. It is for this reason that consultation with the statutory consultees is essential in determining whether there is an operational impact on the radar system and if so, whether a mitigation can be agreed.

There may also be impacts upon other radio systems such as Air Ground Air communications and radio navigation beacons.

Consideration of Obstacle Aspects

As wind turbines are tall structures they can become obstacles to aviation. When in the vicinity of an aerodrome this will be assessed by the aerodrome itself. Away from an aerodrome the CAA will assess whether a wind turbine is an obstacle. The key blade tip heights to consider for developments away from an aerodrome are:

- 91.4 metres as there is an international requirement for all obstacles of 300 feet or more in height to be marked on aeronautical charts and listed in the UK Aeronautical Information Publication. This assists pilots to safely plan their flights to take into consideration the locations of tall obstacles. The national database of aeronautical obstacles is maintained by the Defence Geographic Centre.
- 150 metres at which the display of medium intensity aviation warning lights becomes mandatory as specified in Article 219 of the Air Navigation Order. There may also a requirement that the turbine is appropriately marked which would require the upper 2/3 of the turbine to be painted white. NB. Like any structure a wind turbine less than

150m in height might need to be lit / marked if, by virtue of their location and nature, it is considered a significant navigational hazard. If asked for comment, it would be unlikely that the CAA would have any issues associated with an aviation stakeholder (eg a local aerodrome operator or airspace operator) request for lighting / marking of any structure that was considered to be a significant hazard to air navigation.

There may be areas where the CAA will consider turbines of lower heights to be obstacles due to a combination of complex airspace with a low base and high terrain. Currently these areas of special consideration include the Manchester Low level Route and the Scottish Terminal Manoeuvring Area. Other areas may be included as wind turbines proliferate and the design of airspace changes.

12. THE CROWN ESTATE

No response.

13. DEFENCE INFRASTRUCTURE ORGANISATION

No response.

14. Joint Radio Company

Site Name: Linfairn Wind Farm (revised)

Turbine at NGR:

WTG Easting Northing

1	234807	602268
2	235251	602521
3	235767	602709
4	236203	602974
5	236486	602712
6	236699	603184
7	237070	603597
8	237114	603182
9	237357	602901
10	236929	600554
11	237626	600477
12	237958	600314
13	238357	600182
14	238662	599974
15	237168	600253
16	237462	600038
17	237779	599858
18	238127	599722
19	238362	599452
20	237020	599792
21	237270	599544

22 237626 599414
23 237920 599234
24 236817 599343
25 237201 599118

Hub Height:80m Rotor Radius:47m

(defaults used if not specified on application)

Cleared with respect to radio link infrastructure operated by:-

Scottish Power and Scotia Gas Networks

JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry together with the Water Industry in north-west England. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.

In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal.

In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.

It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, you are advised to seek re-coordination prior to submitting a planning application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation of your project.

JRC offers a range of radio planning and analysis services. If you require any assistance, please contact us by phone or email.

15. MOUNTAINEERING COUNCIL OF SCOTLAND

The Mountaineering Council of Scotland submits a nil response to this consultation as it is not in an area of interest for us.

16. NATS

No response.

17. RSPB SCOTLAND

We would be grateful if the following comments be taken into account in the preparation of the Environmental Statement:

1. The Scoping Report does not mention undertaking collision risk modelling for birds, which we feel is an essential part of the Environmental Impact Assessment (EIA) process. Modelling should be carried out following the methodology developed by Band et al (2007);

2. For clarity, we would expect the surveys, including the vantage point work, to be carried out in accordance with SNH guidance 'Survey methods for use in assessing the impacts of onshore windfarms on bird communities' (2005). Vantage point watches should target breeding upland waders and woodland species (including black grouse) as well as raptors and geese;

3. The EIA should assess the likely impacts of any proposed forestry clearance on the usage of the site by birds. Clearing the existing vegetation may result in effects on open ground species, which may begin to use this newly felled area for foraging. The possibility for collision risk to increase must be considered in the EIA. The SNH information note 'Post-construction management of wind farms on clear-felled forestry sites: reducing the collision risk for hen harrier, merlin and short-eared owl from Special Protection Areas' (2010) should be consulted.

4. We would recommend that a black grouse survey be carried out using the methodology described in Bird Monitoring Methods (Gilbert et al. 1998) to a buffer of 500m around the site boundary;

5. For clarity, we would expect the Brown and Shepherd survey to extend out to a distance of 500m of the proposed windfarm boundary;

6. We welcome the proposal to develop a habitat management plan with the aim of enhancing the ecological value of habitats on site. We would be happy to be involved in the preparation of it;

7. Given the potential presence of deep peat on the site, we would recommend peat depth surveys be carried out to inform the design process and enable an assessment of likely impacts on this resource.

18. SCOTTISH WATER

No response.

19. VISIT SCOTLAND

No response.

20. SCOTTISH BADGERS

In relation to badgers there is every likelihood that there will be some presence of badgers in the area affected by the proposal. From our point of

view it is critical that a badger survey is carried out to confirm/deny the presence of badgers and to assess how they might be impacted by the development.

Our reasons are two fold. First as far as we are aware this area has not been extensively surveyed and therefore the position on whether badgers are or are not present is unclear. Secondly we are aware that locally there is an active population of badgers in the area around Straiton about one kilometre north east of the proposed site confirmed by the report of setts and road kills in that area. There are likely to be more badger setts yet to be identified. For this reason we would strongly recommend that a full site survey to confirm/deny the presence of badger is carried out. Should they be present and should the proposed development impact on them then a suitable badger protection plan should be provided by the applicant to ensure minimal impact on badgers. This survey should include the site access for construction and any permanent tracks provided for construction and future maintenance on the site. We should also ensure that at any future date when application is made for grid connection that this area is also surveyed.

*I have attached a copy of our policy document on wind farms for your information**

***Scottish Badgers - Wind Farms – Policy Statement**

In principal Scottish Badgers is not opposed to the building of wind farms as a means of producing renewable energy. There are a number of measures which we would propose as a basis for our advice to developers, planners and in some cases at Public Enquiries. Needless to say the rules that apply to any development still apply to wind farms and licensing procedures will still be followed. There are however some unique circumstances associated with wind farms and these need to be addressed and it is our best practice advice that no turbine should be sited closer than 500 metres from a badger sett.

The distance from a turbine tower to the entrance of a main sett can currently be as little as 30 metres although in some instances this has been recognised as being too close and a 50 metre stand off has been agreed. There is however the remote possibility that a turbine could collapse and fall onto a badger sett. It has to be stated that it is extremely unlikely but never the less is possible. The Highways Authority and Transport Scotland have recognised that there is a remote possibility that a tower could fall and recommend in Planning Policy Statement 22 *“Although a wind turbine erected in accordance with best engineering practice should be a stable structure, it may be advisable to achieve a set back from roads and railways of at least fall distance (Height measured to blade tip) to achieve maximum safety.”* Presumably this is to prevent road/rail accidents in the remote instance that a tower should fall over. There are recorded events involving structural failure of the turbine. From the data obtained, this is the third most common accident cause, with 60 instances found. “Structural failure” is assumed to be major component failure under conditions which components should be designed to withstand. This mainly concerns storm damage to turbines and tower collapse. However, poor quality control, lack of maintenance and component failure can also be responsible. While structural failure is far more damaging

(and more expensive) than blade failure, the accident consequences and risks to human health are most likely lower, as risks are confined to within a relatively short distance from the turbine. This bolsters our case for our request for a minimum standoff of 30 metres plus tower height. There has been a sharp rise in structural failures in the latter part of 2007 continuing into 2008. We too are looking at the worst scenario and advise planning for what are often called "100 year events" therefore it is our advice that a turbine tower should be placed no nearer than our best practice guideline but in any case no nearer than the height of the tower (height measured to blade tip) plus thirty metres to prevent damage to a sett in the unlikely event that a turbine tower should topple over.

There are other circumstances that might cause damage to badgers setts during the operation of the wind farm and a much more likely event is the failure of a blade. By far the biggest number of incidents found was due to blade failure. "Blade failure" can arise for a number of reasons and results in either whole blades or pieces of blade being thrown from the turbine. A total of 139 separate incidences were found. Pieces of blade are documented as travelling over 400m, typically from much smaller turbines than those proposed for use today. In Germany, blade pieces have gone through the roofs and walls of nearby buildings. However given that there is documentary proof that blade failure could lead to damage up to 500 metres from the turbine tower we would state that best practice is not to build a turbine any closer to a sett than 500 metres.

Currently it is often claimed that noise and vibration are a problem but developers will cite many instances where badgers have continued to live under roads and beside railways where the noise and or vibration have not disturbed them enough to make them move out. The source of those noise/vibration pollutants is not constant and will occur only when a vehicle or train passes the sett; on the other hand when the turbines are in operation there is a constant background noise and some vibration transmitted through the concrete deck into the surrounding soil. Because there is no robust proof one way or another developers have latched on to the idea that noise and or vibration does not affect badgers. Our current policy is to ask for pre and post development monitoring to see if indeed there is a problem given the situation that rural badgers are far more likely to be disturbed by unknown noises or disturbance than urban badgers. It is therefore our advice that a condition of any planning consent should be that both pre and post development monitoring should be carried out until such time as robust proof has been gathered to confirm that badgers are either not disturbed or that indeed they are disturbed by the presence of wind turbines.

A common factor in planning applications is that rarely does the applicant indicate by what means electricity produced will be extracted from the site, overhead or underground cable. Once more we are faced with the question about micro siting pylons from a sett or the disturbance factor involved in digging a trench to receive the underground cable. It is our advice that pylons should be sited no closer than the height of the pylon plus thirty metres from a badger sett. The normal best practice guideline should be followed in relation to open trenches should the electricity be extracted through underground cables.

The normal stand off distance of thirty metres from a sett is acceptable for the placement of roads to the site during construction and for future maintenance although best practice would suggest that these access routes be placed as far away as possible from the setts.

21. GLASGOW PRESTWICK AIRPORT

I have now reviewed the scoping report and agree that impact on our primary radar is likely and welcome the commitment to explore mitigation measures.

As stated in the scoping report Glasgow Prestwick Airport is working towards a regional solution to mitigate aviation impacts of wind farms to the south and east of the airport, and it is likely that Linfairn would be able to benefit from this solution once it is in place. However, this solution is still in its infancy and we unfortunately must object to this proposal on safeguarding grounds until a mitigation can be agreed and implemented.

**DEVELOPER APPLICATION AND ENVIRONMENTAL STATEMENT
CHECKLIST**

- | | |
|--|--------------------------|
| | Enclosed |
| 1. Developer cover letter and fee cheque | <input type="checkbox"/> |
| 2. Copies of ES and associated OS maps | <input type="checkbox"/> |
| 3. Copies of Non Technical Summary | <input type="checkbox"/> |
| 4. Confidential Bird Annexes | <input type="checkbox"/> |
| 5. Draft Adverts | <input type="checkbox"/> |
| 6. E Data – CDs, PDFs and SHAPE files | <input type="checkbox"/> |

-
- | Environmental Statement | Enclosed | ES Reference
(Section & Page No.) |
|---|--------------------------|--------------------------------------|
| 7. Development Description | <input type="checkbox"/> | |
| 8. OS co-ordinates for site and turbine layout | <input type="checkbox"/> | |
| 9. Planning Policies, Guidance and Agreements | <input type="checkbox"/> | |
| 10. Natural Heritage | <input type="checkbox"/> | |
| 11. Economic Benefits | <input type="checkbox"/> | |
| 12. Site Selection and Alternatives | <input type="checkbox"/> | |
| 13. Construction and Operations (outline methods) | <input type="checkbox"/> | |
| 14. Decommissioning | <input type="checkbox"/> | |
| 15. Grid Connection details | <input type="checkbox"/> | |
| 16. Baseline Assessment data – air emissions | <input type="checkbox"/> | |
| 17. Design, Landscape and Visual Amenity | <input type="checkbox"/> | |
| 18. Archaeology | <input type="checkbox"/> | |
| 19. Ecology, Biodiversity & Nature Conservation | <input type="checkbox"/> | |
| 20. Designated Sites | <input type="checkbox"/> | |
| 21. Habitat Management | <input type="checkbox"/> | |
| 22. Species, Plants and Animals | <input type="checkbox"/> | |
| 23. Water Environment - Hydrology | <input type="checkbox"/> | |
| 24. Geology - Peat survey data and risk register | <input type="checkbox"/> | |
| 25. Forestry | <input type="checkbox"/> | |
| 26. Waste | <input type="checkbox"/> | |
| 27. Aviation | <input type="checkbox"/> | |
| 28. Telecommunications | <input type="checkbox"/> | |
| 29. Noise | <input type="checkbox"/> | |
| 30. Shadow Flicker | <input type="checkbox"/> | |
| 31. Traffic Management | <input type="checkbox"/> | |
| 32. Cumulative Impacts | <input type="checkbox"/> | |

FORMAL SUBMISSION OF APPLICATION AND APPLICATION GATE-CHECKING

Developers should note that prior to any application being accepted by the Energy Consents and Deployment Unit it will pass through a gate-checking exercise in which the content of the final Environmental Statement will be checked against the above checklist and against the comments made by all consultees in the Scoping Opinion. Developers should ensure that their final ES pays cognisance to the advice within this Scoping Opinion, and fully addresses all concerns raised.

Developers should not publicise applications in the local and national press until the application and the corresponding press notices have been checked and confirmed as acceptable by officials.