SCOTTISHPOWER
RENEWABLES

Black Law Windfarm
Extension Phase 2

Scoping Request

February 2010

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Executive Summary

ScottishPower Renewables (UK) Limited (SPR) has identified an area within Dura and Muldron Forests, which is located within North Lanarkshire and West Lothian (the Development) to extend the operating capacity of Black Law Windfarm. The Development site would have a capacity of approximately 45MW of renewable power for export to the national grid and would contribute to meeting the Scottish Government's targets of providing 50% of Scotland's electricity generation from renewable sources by 2020.

The Development could consist of approximately 15 wind turbine generators that would have a maximum blade tip height of 126.5 metres (similar to Black Law Windfarm Extension[1]). This Development would form a separate application to that of the existing Black Law Windfarm Extension Phase 1 application (submitted in January 2008) that is still to be determined by the Scottish Government. It should also be noted that SPR do not plan to site any further turbines amongst the turbines applied for within Black Law Windfarm Extension Phase 1.

In addition to the wind turbine generators, there will be site access points; fenced substation and switchgear compound; control building; power cables; onsite access tracks; forestry operations; borrow pits; and steel lattice or tubular tower anemometer masts.

SPR plan, in due course, to submit an application for consent under Section 36 of the Electricity Act 1989 and which, will be accompanied by an Environmental Statement to the Scottish Government for the Development.

This report forms SPR's written request to the Scottish Government, under Regulation 7 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, for its opinion as to the information to be provided in the Environmental Statement (a 'Scoping Opinion') for the Development.

Environmental Impact Assessment (EIA) is a process that includes the identification of the potential environmental effects of a development and then seeks to avoid, reduce or offset any adverse effects through mitigation measures.

The Environmental Statement (ES) that will be produced for this project will also support the application for deemed planning permission under Section 57 (2) of the Town & Country Planning (Scotland) Act 1997.

This scoping request provides details of the Development, the site and the surrounding area, the potential impacts of the Development and the approach currently considered appropriate for the EIA to assist in the formal scoping process. The purpose of this report is to invite all consultees to comment on the Development and raise any relevant issues for consideration during the EIA process.

The scoping request therefore describes the baseline environment where possible and lists aspects of the environment that have the potential to be

[1] For the purpose of this document the existing Black Law Windfarm Extension proposal (submitted in January 2008) will be termed Phase 1.

affected by the Development (known as “Black Law Windfarm Extension Phase 2”) and outlines the proposed approach and methodology for the EIA.

Although the layout and design have still to be developed, an understanding of the construction and operational parameters associated with the Development, along with knowledge of the baseline environment of the site, enables the possible effects of the Development to be identified.

The findings of this scoping request in conjunction with the scoping opinions received from the Scottish Government and other consultees will be used to inform the EIA. The list of consultees to be consulted is presented in Section 9.

By conducting this exercise as early as possible, the overall project planning and design can take account of any alterations or measures that will act to resolve potential issues and minimise possible impacts of the Development.

1 INTRODUCTION

Background

1.1 ScottishPower Renewables (UK) Limited (hereafter referred to as SPR), an Iberdrola Renovables company has the responsibility for developing, operating and maintaining renewable energy developments across the UK and Ireland. SPR has identified further areas within Dura and Muldron forests, which lies adjacent to the consented and operating Black Law Windfarm and the proposed Black Law Windfarm Extension[2] as a potential site for a further windfarm development project.

1.2 SPR is part of Iberdrola Renovables, the largest wind energy company in the world with an installed capacity of close to 11,000 MW at the end of 2009, and a development potential of over 57,400 MW. SPR had over 800 MW of installed capacity at the end of 2009, and a development potential of 5,115 MW.

1.3 Driven by commitments to address climate change and contribute to government targets to increase the proportion of electricity generated from renewable sources, SPR aims to expand its renewables capacity.

1.4 SPR has been undertaking a search for potential windfarm sites across the UK. It has identified the area in and around Dura and Muldron forests as one of a number of preferred sites. Due to the proximity to SPR's consented and operational Black Law Windfarm and the proposed Black Law Windfarm Extension Phase 1 that is currently in the planning system, the project will be known as Black Law Windfarm Extension Phase 2 (referred to hereafter as the "Development"). Although the indicative development boundary (see Figure 2) for the Development overlaps with that of Black Law Windfarm Extension Phase 1 it is not SPR's intention to site turbines amongst turbines associated with Black Law Windfarm Extension Phase 1 or the existing Black Law Windfarm.

1.5 The Development lies within the planning authority areas of North Lanarkshire and West Lothian (Figure 2). It is likely that the only infrastructure within West Lothian will be the access corridor. It is approximately: 2 kilometres south east of Allanton; 3 kilometres south of Shotts; 3.5 kilometres south west of Fauldhouse; and 5 kilometres north west of Forth. The Development lies immediately to the north west of the consented and operational Black Law Windfarm and to the west of Black Law Extension Phase 1, which has been under consideration by the Scottish Government since January 2008. It is an exposed site approximately 220-270m above sea level, which will enable a high wind yield to be achieved by the Development. The location of the Development in relation to surrounding settlements is shown in Figure 1.

[2] For the purpose of this document the existing Black Law Windfarm Extension proposal (submitted in January 2008) will be termed Phase 1.

1.6 SPR currently intends to apply to the Scottish Government for consent under Section 36 of the Electricity Act 1989 for the construction and operation of a windfarm on the site. This report forms SPR's written request to the Scottish Government, under Regulation 7 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, for its opinion as to the information to be provided in the Environmental Statement (a 'Scoping Opinion') for the development of the site.

1.7 Environmental Impact Assessment (EIA) is a process that includes the identification of the potential environmental effects of a development and then seeks to avoid, reduce or offset any adverse effects through mitigation measures.

1.8 An Environmental Statement (ES) will support the application.

1.9 It is likely the Development will comprise of approximately 15 turbines and have an installed capacity of approximately 45 MW.

1.10 The Development area is approximately 5.7km by 2.1km. There are two landowners who both use the area for commercial forestry. The Development area is shown in Figure 2, although this may be subject to change as the Environmental Impact Assessment (EIA) and design of the Development progresses.

1.11 During the EIA process, SPR will appoint a team of independent specialist consultants to advise on environmental issues, to develop the layout of the Development, and to provide environmental information to enable the production of an Environmental Statement (ES) to accompany the application for consent.

Document Purpose

1.12 This document forms SPR's written request to the Scottish Ministers, under Regulation 7 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (the Regulations), for their opinion as to the information to be provided in the ES (a 'Scoping Opinion').

1.13 This document also informs the Scottish Ministers, under Regulation 8 of the Regulations, that SPR intends to make an application for Section 36 consent in relation to the Development and that SPR intend to submit an ES with the Section 36 application.

Document Structure

1.14 Chapter 2 identifies the policy context and legal framework applicable to this document.

1.15 Chapter 3 provides general information on the proposal as required by Regulations 7, (2) (a), (b) and (c), including a brief description of the nature and purpose of the Development and of its possible effects on the environment. Figures 1 and 2 show the location of the Development and the indicative site boundary.

1.16 Chapter 4 outlines the environmental baseline and effects.

1.17 Chapter 5 provides an outline of the proposed contents of the ES.

1.18 Chapter 6 outlines the Consultation Strategy.

1.19 Chapter 7 outlines contact details for SPR.

1.20 Chapter 8 outlines the Appendices relating to the EIA methodologies that the team of environmental consultants will be requested to follow in assessing the likely environmental effects.

1.21 Chapter 9 details the Consultees that will receive a copy of the Scoping report.

2 POLICY & LEGISLATIVE CONTEXT

Policy Context

2.1 Renewable energy sources are natural energy sources such as sunlight, wind, waves and tides, which are continuously replenished. Of these renewables, wind power is the most economical and technically developed. It offers benefits in terms of electricity generation that is free from emissions of carbon dioxide (the main 'greenhouse gas' associated with global warming) and other pollutants.

2.2 Climate change is the single most important long-term threat to the global environment, particularly to biodiversity and to birds[3]. Recent research suggests that climate change could drive between 18% and 35% of species to extinction by 2050[4]. In Scotland, alpine/upland habitats and species are particularly at risk, as are birds such as the ptarmigan, capercaillie and the Scottish crossbill – the UK's only endemic bird species.

2.3 This Development is proposed as part of the response of SPR to targets set by UK and the Scottish Governments to increase the proportion of electricity generated from renewable sources and hence reduce Scotland's contribution to climate change.

2.4 The European Union has recently agreed that by 2020 one-fifth of all Europe's energy should come from renewable sources. In line with this agreement, the European Commission has proposed a target whereby 15% of UK energy will be supplied from renewable sources. Achieving this target could require renewable generators to provide between 30 and 40% of the UK's electricity supplies[5].

[3] Chief Scientific Adviser to the Government, Professor Sir David King, evidence to the House of Lords Select Committee on the European Union, inquiry into a "Sustainable EU Policy on Climate Change", Hansard, 10 March 2004.

[4] Royal Society for the Protection of Birds, evidence to the House of Lords Select Committee on the European Union, inquiry into a "Sustainable EU Policy on Climate Change", Hansard, 3 March 2004.

[5] BERR (2008).Transmission Access Review – Final Report. Published 26 June 2008.

2.5 In 2008, the Scottish Government announced that Scotland's renewable electricity target would be to provide 50% of Scotland's electricity from renewables by 2020, with an interm milestone of 31% by 2011.

2.6 To assist in meeting its renewable energy objectives, and to review the capacity of the Scottish electricity grid, the (then) Scottish Executive commissioned studies into the potential for renewable energy in Scotland to 2020. The findings of these studies were published in December 2001[6], and showed that Scotland has a potential renewable energy resource in excess of 60,000 MW. The majority of this is made up of wind energy, both onshore and offshore. These studies stated that both onshore and offshore wind could account for 11,500 MW and 25,000 MW, respectively, of new renewable energy generating capacity. Onshore wind was the cheapest of the technologies considered and, on this basis, can be expected to make the largest contribution to near-term Scottish Government targets for renewable energy.

2.7 The potential of Scotland's wind resource was further emphasised in a series of UK Government commissioned regional renewable energy assessments[7]

The Electricity Act

2.8 Under Section 36 of the Electricity Act 1989 ('the Act'), consent is required from the Scottish Ministers for the construction, extension and operation of a power generating station with a capacity of 50 MW or more. Although the Development will not exceed this 50 MW capacity alone, it is considered that as the Development would form part of an extension to the existing and operational Black Law Windfarm (124.2 MW) then this Development will be applied for under this Act.

2.9 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 the Scottish Planning Policy (SPP), National Planning Policy, other relevant Policy , Planning Advice Notes, the relevant planning authority's Development Plan and any relevant supplementary guidance.

2.10 On granting consent under Section 36, the Scottish Ministers can also decide that planning permission be deemed to be granted, if requested to do so.

The Environmental Impact Assessment Regulations

2.11 The Electricity Works (Environmental Impact Assessment)(Scotland) Regulations 2000 ('the EIA Regulations') implement European Union Council

[6] Scottish Executive (2001) Scotland's Renewable Resource: Impact of Renewable Energy Generation on the Electrical Transmission Network in Scotland.
[7] DTI and DTLR (2002) Regional Renewable Energy Assessments by Oxera Environmental and Arup Economics & Planning.

Directive 85/337/EEC as amended by Council Directive 97/11/EC on the assessment of the effects of certain public and private projects on the environment, insofar as it relates to applications for consent to construct, extend or operate a power station or install or keep installed overhead electricity lines under Sections 36 and 37 of the Act. Guidance on the Regulations is contained in a Guidance Note (the 'Guidance Note').

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

2.13 Schedule 1 of the Regulations lists those developments for which EIA is mandatory, whilst Schedule 2 describes projects for which the need for EIA is judged by the Scottish Ministers on a case-by-case basis through a screening process. Schedule 3 describes the criteria to be used by the Scottish Ministers to determine if a development is 'EIA development'.

2.14 Where EIA is required, environmental information must be provided by the developer in an ES. Schedule 4 specifies the information that must or may be provided in such a Statement.

2.15 The Regulations prohibit the Scottish Ministers from granting consent for an EIA development without taking into account an ES, together with any associated environmental information.

2.16 The Development is a Schedule 2 development: *"(1) a generating station, the construction of which (or the operation of which) will require a section 36 consent but which is not Schedule 1 development."*. If therefore it is likely to have significant environmental effects because of factors such as its nature, size or location, it is 'EIA development', and a formal EIA is required. SPR independently propose that the Development should be subject to EIA.

Obtaining a Scoping Opinion (Regulation 7)

2.17 Under Regulation 7, the developer of an EIA development may ask the Scottish Ministers, before submitting an application for a Section 36 consent under the Act, to state in writing their opinion as to the information to be provided in the ES (i.e. to provide a 'Scoping Opinion').

2.18 The Guidance Note (Guidance on The Electricity Works (Environmental Impact Assessment)(Scotland) Regulations 2000) states that this provision allows the developer to be clear about what the Scottish Ministers considers to be the main effects of the development and therefore the topics on which the ES should focus.

2.19 The request for a Scoping Opinion must be in writing and should include basic information on the Development as set out below:

(a) a plan sufficient to identify the site which is the subject of the development;

(b) a brief description of the nature and purpose of the proposed development and its possible effects on the environment; and

such further information or representations as the person making the request may wish to provide or make.

2.20 The Guidance Note states that the developer should also submit a draft outline of the ES, giving an indication of what he considers to be the main issues, to provide a focus for the Scottish Ministers' considerations.

2.21 This information is presented in the following sections of this document.

2.22 Once the Scottish Ministers have received all the information they require, they will then obtain the views of the relevant consultative bodies..

2.23 When the Scottish Ministers issue a Scoping Opinion, they must state what information should be included in the ES, giving their reasons why. The Regulations also require the Scottish Ministers to make available to the public, via the Planning Authorities, their Scoping Opinion.

2.24 The findings of this Scoping Report in conjunction with the Scoping Opinion received from Scottish Government and comments from other consultees will be used to inform EIA. The list of consultees to be consulted is presented in Section 9.

Provision of Information by Consultative Bodies (Regulation 8)

2.25 Under the Environmental Information Regulations 1992, public bodies must make environmental information available to any person who requests it. These Regulations are pertinent where a developer is preparing an ES for an EIA development.

2.26 Regulation 8 of the EIA Regulations provides for the developer to acquire from public bodies any environmental information which they hold which will assist in the preparation of the ES.

2.27 When the developer notifies the Scottish Ministers, under Regulation 8, that he intends to provide an ES with the application, the Scottish Ministers will notify the Consultative Bodies and other relevant environmental organisations and ask them to make the information available. The developer will be told who these organisations are, together with their addresses.

The Environmental Impact Assessment (EIA) Process

2.28 EIA is a process, which identifies the potential environmental effects of a development and then seeks to avoid, reduce or offset any adverse effects through 'mitigation measures'. EIA follows a series of stages:

(a) site selection and project initiation;

(b) screening – is an EIA required;

(c) pre-application discussions;

(d) **scoping – consultation on proposed scope and methodology**[8];

(e) environmental baseline studies – establish what is there;

(f) assessment of effects – determine the potential effects;

(g) mitigation – modify proposals to incorporate mitigation measures and re-assess residual effects;

(h) preparation of ES;

(i) submission of Section 36 Application with ES;

(j) consideration of application and environmental information by Scottish Ministers and consultees;

(k) decision to refuse or grant consent (with or without conditions); and

(l) implementation and monitoring.

2.29 In reality the EIA process is both iterative and cyclic, and runs in tandem with project design. As potential effects are identified, the design of the project (for example, the layout of the turbines) will be adjusted and mitigation measures proposed. Consultation, a vital component of the EIA process, continues throughout each stage and contributes both to the identification of potential effects and mitigation measures.

2.30 The EIA process therefore provides the opportunity to develop windfarm projects, for which the environmental effects have effectively been removed or minimised. In many cases significant effects on, for example, ecology, ornithology, archaeology and noise can be prevented through sensitive site design and selection. Others, for example the effects of construction, can be effectively managed through the adoption of best practice.

2.31 At this early scoping stage, however, it is important to identify all 'potential' effects so that a rigorous assessment process, with input from independent experts, is followed based on sound objective evidence. The *potential* effects of the Development are therefore described in Section 4 of this report.

Other Consents and Licences

2.32 A request to the Scottish Government for deemed planning permission under Section 57 (2) of the Town & Country Planning (Scotland) Act will be made therefore negating the requirements for a separate planning application under Section 57 of the Town & Country Planning (Scotland) Act from the Planning Authority.

2.33 Consideration will also be given to the Conservation (Natural Habitats &c) Regulations 1994 and the Wildlife and Countryside Act 1981 with regards to the potential requirement for an Appropriate Assessment and Environmental Protected Species licences.

[8] The stage ScottishPower Renewables is currently at with the Development.

Scoping Question: Have all regulatory requirements that should be taking into account been identified?

3 SITE SELECTION, SITE LOCATION & NATURE OF DEVELOPMENT

Site Selection

3.1 SPR's site selection process is designed to identify potential windfarm sites which are economically and technically viable, environmentally acceptable, most likely to obtain planning approval, and make meaningful contributions to SPR's targets for renewable energy generation.

SPR's Site Selection Policy

3.2 SPR's site selection policy is outlined in the document - "Windfarm Sustainable Development Policy (2004)", which sets out our approach according to the principles of sustainable development. A range of external environmental organisations, namely, Friends of the Earth Scotland, the Royal Society for the Protection of Birds Scotland, Scottish Natural Heritage (SNH) and WWF Scotland, have been consulted on this policy and their comments incorporated.

3.3 This Windfarm Sustainable Development Policy sets out SPR's policy for all stages of windfarm development from site selection to decommissioning. The overall aim of the policy is to:

> "*Identify potential sites that are likely to be acceptable in terms of their technical and economic criteria whilst ensuring that the potential development will not have any unacceptable social, economic or environmental impacts." (ScottishPower's Windfarm Sustainable Development Policy, 2004)*

3.4 The policy sets out a commitment from SPR not to develop within or nearby National Parks or National Scenic Areas where there could be unacceptable impacts. It also identifies a commitment to avoid a range of other designated areas where development would have an unacceptable impact and to give special consideration to nationally and internationally important species and habitats in the wider countryside. Irrespective of designation, the landscape character and nature conservation interests of all candidate sites are taken into consideration.

3.5 In addition to these criteria, potential sites are screened against a series of technical, environmental and economic factors. These include wind speed and energy yields, site access, distance from communities and proximity to electricity grid.

The Selection of the Development for potential windfarm development

3.6 The Development site was considered an excellent potential site and was selected by SPR for a number of reasons, including the following:

(a) good wind resource;

(b) it is located within a significantly man-modified landscape of commercial forestry;

(c) good access to site from main road network;

(d) good potential for connection to the electricity grid;

(e) relatively sparsely populated area; and

(f) Identified within Zone 1 for wind farm search areas in North Lanarkshire within the draft North Lanarkshire Council Supplementary Planning Guidance (Winter 2009).

Site Location

3.7 The Development is located in both Dura and Muldron forests near Allanton in the Central Belt of Scotland. The area is currently being used for commercial forestry by both land owners. The Development lies within the planning authority areas of North Lanarkshire and West Lothian (Figure 2). It is likely that the only infrastructure within West Lothian will be the access corridor.

3.8 The Development is located on an extensive upland plateau that is extremely exposed with heights up to 220m to 270m, with the highest peak on the southern periphery of the Development just west of Lark Law (270m).

3.9 The Development area is approximately 5.7km by 2.1km. The Development is situated within commercial forest. The indicative site boundary of the Development is shown in Figure 2, although this may be subject to change as the EIA and design of the Development progresses. Table 3.3 provides OS grid references for the general extents of the site.

Table 3.3: Grid co-ordinates for the extent of the Development (co-ordinates are approximate for the Development)

Point ID	Grid Co-ordinates
North West	286730, 656730
North East	291130, 657860
South East	291900, 656980
South West	286430, 655410

Land Use and Ownership

3.10 The principal land use at the Development is commercial forestry, which is managed by the two landowners.

3.11 Some areas of forestry would need to be felled or restructured to accommodate the Development.

3.12 The Development will not require any changes in land ownership.

Nature and Purpose of the Proposed Development

3.13 The Development would generate renewable electricity from wind power. Wind power is an effective means of generating electricity. Modern wind turbines generate electricity 70-85% of the time, with the output dependant on the wind speed. Over the course of a year turbines generate at around 30% (varying from 25-40%) of the theoretical maximum output. This measure of availability is known as the "Capacity Factor". The availability of conventional power stations (known as the Load Factor) is around 50%[9], with coal-fired generation ranging from 35-85% and hydroelectric from 30-50%[10].

3.14 In contrast to many other conventional forms of electricity generation, an operating windfarm does not produce large emissions to air, or contribute to global environmental problems. Wind energy leads to lower emissions of climate change causing gases such as carbon dioxide (CO_2) through the avoided use of fossil fuels.

3.15 Research has shown that a modern wind turbine will recover all of the energy expended in its manufacture, operation and decommissioning within approximately 6-9 months[11].

3.16 The total installed capacity of the Development would be up to 45MW. This would contribute to Scotland's renewable energy target of generating 50% of Scotland's electricity from renewables by 2020.

Nature of Development

3.17 The main elements of the Development will comprise:

(a) approximately 15 turbines and turbine foundations;

(b) site access points;

(c) fenced substation & switchgear compound;

(d) power cables linking the turbines to a control building, laid underground in trenches;

(e) graded stone tracks within the Development integrated with any existing tracks and giving access to turbine bases and control building;

(f) forestry operations including tree felling and restocking;

(g) borrow pits for sourcing local materials for tracks;

(h) steel lattice or tubular tower anemometer masts for wind turbine performance monitoring; and

[9] www.embracewind.com/myths

[10] www.bwea.com/energy/rely

[11] Hansard, Written Answers to Questions, 4 February 2004, Jacqui Smith, Minister of State for Industry and the Regions (152448)

(i) temporary site construction compounds and associated infrastructure.

3.18 Careful consideration will be given to the design and layout of the Development as the EIA progresses. At this early stage, it is considered that turbines (up to 126.5m to blade tip height) may be suitable for the Development due to the scale and character of the landscape. However, it should be stressed that the final choice of turbines and the most appropriate layout of the Development will be guided by the findings of the EIA, which includes consultation with all relevant parties[12].

3.19 A finalised layout is not presented in this report, although the indicative site boundary (as shown in Figure 2) represents the Development area within which the turbines, access tracks and other infrastructure will be located. SPR considers it important to gather the initial views of consultees before finalising the layout, so that initial views, in particular on the size of turbines, landscape and visual constraints and natural heritage constraints can be taken into account at the earliest possible stage.

3.20 The maximum dimensions of the proposed turbines are presented in Table 3.20, although a range of turbines sizes are being considered. The proposed turbines would be three bladed horizontal axis turbines with an approximate hub height of 80m and blade rotor diameter of up to 93m. This would give a total maximum height to blade tip of 126.5m. The turbine towers would be of tapering tubular steel construction, finished in a light grey semi-matt colour, similar to the surrounding windfarms. The installed capacity of the Development would be approximately 45MW.

Table 3.20: Indicative details of turbine numbers, dimensions and capacity for the Development

Parameter	**Scale**
Number of turbines	Approximately 15
Hub Height	Approximately 80 metres
Rotor Diameter	Up to 93 metres
Height to blade tip	Up to 126.5 metres
Generating Capacity per Turbine	2-3 MW
Potential Total Development generating capacity	Approximately 45 MW

Existing Land Uses

3.21 Some areas of commercial coniferous forestry are likely to be felled in order to accommodate the Development. This will create an opportunity to diversify habitats and re-structure the forest according to contemporary standards and forestry best practice. The project team will work closely with forestry experts and the private landowners on these proposals, within the context of existing felling, restocking and Forest Design Plans[13].

[12] These include: landowners, the general public, statutory consultees, non-statutory consultees and specialist consultants.

[13] The Forest Design Plan (FDP) is a document updated every five years, which outlines and explains how the forest is to be managed and why. It includes felling and planting proposals and other management strategies. Forestry Commission Scotland (FCS) formally approves all FDPs.

Connection to the Grid

3.22 The connection point for the Development is currently unknown. However, the application for a grid connection will be covered by a separate Section 37 (of the Electricity Act 1989) application by others.

Access

3.23 The access route for construction vehicles will be subject to survey and will be selected to minimise potential effects on the local area and transport infrastructure. However, the preliminary view is that access to the Development would be from the B715.

3.24 The need for new tracks will be minimised by upgrading and making use of existing forestry access tracks where possible, but a network of new tracks will also be required. Where possible, the stone required for tracks will be sourced from onsite borrow pits. This will minimise transportation movements of stone to the Development. However, depending on the quality of stone found, it may be necessary to import stone into the Development.

Windfarm Lifecycle

3.25 It is expected that the construction phase of the Development would be completed over a period of around 18 months. It is currently proposed that the Development would have an operational life of 25 years. At the end of this period, the Development would be decommissioned and the turbines removed. Alternatively, a fresh application may be made to extend the life of the Development or replace the turbines.

Planning Authorities and Policy

3.26 Scottish Planning Policy Guideline (February 2010) gives guidance on the factors to be considered in the Development and determination of renewable energy development proposals including windfarms. Planning Advice Note 45 Renewable Energy Technologies (Revised 2002) & PAN 45 Annex 2 (2008) currently provide advice on good practice and other relevant information.

3.27 The Development lies within the planning authority areas of North Lanarkshire and West Lothian (Figure 2). It is likely that the only infrastructure within West Lothian will be the access corridor.

Initial Consultation

3.28 SPR has held informal discussions with officials from North Lanarkshire Local Authority to discuss the proposals.

North Lanarkshire Policy Context

3.29 For the part of the Development within North Lanarkshire, the current structure plan for the area is the Glasgow & Clyde Valley Structure Plan 2006. which was approved in April 2008.

3.30 The Glasgow & Clyde Valley Structure Plan 2006 Key Diagram 22 identifies a 'Potential areas of search for significant windfarms'. The Development lies within this Potential Area.

3.31 The adopted Local Plan is the Southern Area Local Plan (Adopted 2008). However, the Planning Authority is now concentrating resources on the emerging local plan 'North Lanarkshire Local Plan' (Finalised Draft 2009) that will cover the Development and will be considered as a material consideration during the EIA process. It is likely that a Public Inquiry will be held later in 2010 to consider objections raised to the Draft Local Plan.

3.32 North Lanarkshire has also produced draft Supplementary Planning Guidance for Assessing Wind Farm Developments (Winter 2009). This will also be considered as a material consideration during the EIA process.

3.33 The Glasgow & Clyde Valley Joint Structure Plan Committee plan to issue a revised Development Plan Scheme in March 2010. Work is continuing to progress the emerging Strategic Development Plan and this is likely to be a material consideration but the weight to be given to it will depend on the stage it has reached as the EIA progresses.

3.34 North Lanarkshire Council will consider its Local Development Plan Scheme (first published in March 2009) in the context of the North Lanarkshire Local Plan which is the current focus of its resources.

West Lothian Policy Context

3.35 For the part of the Development within West Lothian the current structure plan for the area is the Edinburgh & The Lothians Structure Plan 2015 (Approved June 2004). Policy ENV 6 states that the development of renewable energy resources will be supported where this can be achieved in an environmentally acceptable manner. This structure plan is not being reviewed as the new Development Plan Scheme is being implemented

3.36 The West Lothian Local Plan was adopted in January 2009. Chapter 11 addresses renewable energy issues.

3.37 The emerging Strategic Development Plan for South East Scotland is being progressed and will be a material consideration. A revised South East Scotland Development Plan Scheme is likely to be published in March 2010. Thereafter it is planned to issue the Main Issues Report in Spring 2010

3.38 The emerging Local Development Plan for West Lothian is being progressed but an early publication of the Main Issues Report is not anticipated since the West Lothian Local Plan was only adopted in January 2009. The West Lothian Development Plan Scheme was published in March 2009. The Main Issues Report is likely to be published in Summer 2011.

4 ENVIRONMENTAL BASELINE & POTENTIAL EFFECTS

4.1 Although a layout for the Development has not yet been finalised, SPR's past experience of windfarm developments combined with knowledge of the baseline environment of the Development, enables the possible effects of the Development on the environment to be identified.

4.2 This section outlines baseline environmental conditions where known and the potential effects of the Development. These include cumulative effects with other existing and planned windfarms.

4.3 Further details of the proposed assessment methodologies for each environmental parameter are presented in Section 8. Please note that the methodologies may change subject to: consultation feedback; specialist consultants' recommendations; and progress of the EIA process.

Scoping Question: Do the requirements outlined for assessment of effects look appropriate and complete?

Scoping Question: Are there any other key sources of environmental information that should be consulted?

Landscape and Visual Amenity

Baseline Landscape Information

4.4 The topography within the Development is characterised by an extensive upland plateau, which comprises commercial coniferous plantation.

Landscape Context

4.5 The surrounding area contains a landscape ranging from the highest point at Leven Seat (356m) to the east of the site across the Central Scotland plateau to the north, south and west.

4.6 The area is generally characterised by an extensive and remote undulating upland plateau.

4.7 The plateau is at an average height of around 245m, with several peaks up to 270m across the area and in particular to the south.

4.8 Much of the plateau in the vicinity of the site and to the east is covered by the commercial coniferous forestry of Dura and Muldron Forests.

4.9 The Study Area[14] has several centres of population. Fauldhouse lies to the north east of the site, Shotts lies to the north, Allanton lies to the north west and the village of Forth lies to the south east of the site.

4.10 There are two major traffic routes within the Study Area. The A71 runs almost parallel to the M8/A8 corridor that connects the east and west of Central Scotland.

4.11 An Edinburgh to Glasgow railway line passes the north of the site and also follows an east-west route.

Landscape Character

4.12 The landscape resource of the Study Area is described within the SNH character assessments, 'The Glasgow & Clyde Valley Landscape Assessment' and 'The Lothians Landscape Assessment'.

4.13 The landscape of the Study Area comprises a number of character areas that essentially form the landscape of Central Scotland. The key components of the landscape include elevated undulating hills dominated by forestry interspersed by man-made mineral extraction and waste facilities. It also accommodates a concentration of settlements and communication routes.

4.14 The Glasgow & Clyde Valley Landscape Assessment identifies areas variously described as Plateau Moorlands, Plateau Farmlands, Rolling Farmland, Fragmented Farmlands and Broad Valley Lowland. The Lothians Landscape Assessment describes the eastern parts of the study area as Upland Fringes.

4.15 The wider southern parts of the Study Area are also covered by the Glasgow & Clyde Valley Landscape Assessment.

Visual Amenity of the Development

4.16 The location of the Development is likely to impact on some aspects of visual amenity, although as an extension to an existing windfarm the impacts may be less than for a new site.

4.17 Under ideal conditions it is reported that turbines can be discerned in views of up to 30km and more. At this range they are however only marginally visible and this, only when the visibility conditions are near perfect. At this range the effects of the Development on the visual amenity are generally very limited. It is not until much closer range that significant effects on the visual amenity might be expected.

4.18 The exact range at which these effects might become significant depends on the detailed layout of the Development, the location of the viewpoint and the context of the view. As a result of the combinations of factors, which will result in significant (or otherwise) effects, it is not possible to predict a distance within which all effects will be significant. Depending on circumstances the effect on some closer views may be not significant whilst

[14] The landscape and visual amenity study area will encompass an area of 35km radius from the indicative development boundary.

others from a greater range may be significant as a result of the specific context and content of the views.

Landscape Designations

4.19 There are no national or international landscape designations for ornithology, ecology or archaeology covering the Development.

4.20 In West Lothian the current Local Plan was adopted in January 2009. The Key Diagram identifies an Area of Special Landscape Control and a Search Area for Windfarms to the east of the Development.

4.21 In North Lanarkshire the Glasgow & Clyde Valley Structure Plan 2025 (Approved May 2002) Key Diagram identifies the site as a 'Potential Search Area for Windfarms'. In the draft North Lanarkshire Supplementary Planning Guidance (Winter 2009) the Development lies within Zone 1 for wind farm search areas. There are no further landscape designations on the site.

4.22 The broad picture with regard to landscape designations, amongst others, has been summarised by SNH who have produced Policy Statement 02/02 Strategic Locational Guidance for Onshore Windfarms in respect of the Natural Heritage. This provides a composite map, which takes account of the natural heritage sensitivity and identifies the land area of Scotland within three zones, Low, Medium and High Sensitivity. The area of the proposal appears from this map to be predominantly located within Zone 1, that with the lowest sensitivity to development of windfarms in terms of its natural history. There are however limited areas to the northeast of the site which are identified as Medium sensitivity.

Potential Effects

4.23 The effects of the Development on the landscape will be assessed on the basis of the magnitude of change that this will bring, and the sensitivity of the receptor to that change. The presence of a number of designated areas may locally elevate the sensitivity of a number of receptors of effects. In assessing the effects on these receptors however the magnitude of that effect is also considered in determining if the effect is significant as required by The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000 (The Regulations).

Landscape Resource

4.24 The Development will potentially affect the character area/s within which it is located by adding a new component. Given the scale of the Development and the scale and extent of the existing landscape character types, it is possible that the addition of the Development to this will result in a change in the determining characteristics of the landscape character areas within which it is located. Any change in landscape character as a result of the Development will be limited to the character area/s within which it is located.

Perception of the Landscape Resource

4.25 Any changes to the landscape resource outwith these areas will be to the perception of this landscape resource. Changes to this perception will largely be the result of the visibility of the Development and how this affects the appreciation both of the landscape character area within which the observer is located and the wider landscape resource.

Cumulative Effects

4.26 The assessment of the landscape and visual effects of the Development will take account of all of the existing windfarms within 35 km of the Development (or whose study area extends into this), with these forming an integral part of the existing landscape. In addition all those other windfarms within 35 km of the Development which are consented and those for which an application has been submitted but are still within the determination process will be considered.

4.27 The consideration of existing windfarms will be assessed through the effects of the Development on the baseline landscape conditions of which they are a component part.

4.28 The additional consideration of any consented windfarms (or those the subject of an application) will be undertaken separately from the above by means of redefining the baseline landscape, assuming that these windfarms have been built in accordance with the details submitted within their applications. The assessment of the effect of the Development will then be undertaken against this revised baseline.

4.29 The location of proposed windfarms which are the subject of formal "Scoping Requests" and those where scoping opinions have been issued will be identified within the assessment although any potential cumulative effects of these will not be assessed as their details are very preliminary and there is little certainty of their development in this form.

Serial and Sequential Effects

4.30 The size and scale of the Development means that the experience of this within the landscape is unlikely to be limited to a single location. In many cases it will be experienced from the routes (roads and paths), which pass through the landscape. These are, in a number of cases, important both regionally and nationally and the assessment will take account of the serial and sequential appreciation of the Development (including any cumulative effects with other windfarms as described) as this affects the landscape resource and visual amenity.

Construction and Other effects

4.31 The Development will potentially have different effects on the above considerations during the different phases of its lifecycle and these will be considered through the assessment. Typically the effects during construction, operation, decommissioning and any changes subsequent to this would be considered within the assessment.

Assessment Methodology

4.32 A full and detailed landscape and visual assessment of the Development will be undertaken including ancillary infrastructure (such as site roads and borrow pits). The assessment process will be used to revise the layout and design of the Development to minimise effects and will be based on relevant and accepted guidance, advice and best practice including national policy guidance, and other information provided by consultees.

4.33 The detailed methodology for landscape and visual assessment, including the selection of viewpoints, and the scope of the cumulative assessment will be developed in detail by SPR and specialist consultants, and agreed in further consultation with North Lanarkshire Council, West Lothian Council and SNH.

Ornithology

4.34 SPR commissioned Natural Research (Projects) Ltd (NRP) to commence ornithological surveys in November 2009 of the Development and surrounding areas. NRP has extensive experience of ornithological assessments for windfarms and in developing mitigation measures. The methodologies used for the completed surveys are outlined within Section 8. It is proposed that these survey methods are used for all future ornithology survey work unless any consultees indicate otherwise.

PLANNED ASSESSMENTS

4.35 An evaluation will be carried out of the effects of the Development through direct and indirect habitat loss due to land take and disturbance respectively during the construction, operation and decommissioning of the development. This will consider whether such displacement of birds is likely to occur as a consequence of construction or decommissioning work, or due to the presence of the Development close to nesting or feeding sites or habitual flight routes.

4.36 An evaluation of the impacts of collision with rotating turbine blades (i.e. fatality or injury of birds) will be undertaken. Collision rates will be estimated through a combination of theoretical collision risk modelling (if appropriate) and reasoned argument.

4.37 The final report will include proposals for measures to mitigate any identified adverse effects of the Development on bird species. Potential measures including micrositing, the review of construction timing and land management regimes will be considered, as appropriate, in consultation with the appropriate statutory consultees. The need for, and scope of, further monitoring of bird activity in relation to the development site will also be defined as part of the assessment process.

4.38 To undertake these evaluations and to inform proposals for mitigation measures, there is a requirement for site-specific bird studies and surveys. This will allow the formulation of detailed assessments on the potential impacts of the proposals on protected species and other species of local nature conservation importance.

4.39 This Scoping Report sets out the proposed field methods that will be used to gather the required information on birds and outlines how these data will be used to support the final assessments. It is important to note that the proposed methods are indicative only and the overall approach will be flexible. Therefore, if information gathered during the surveys counters the initial assumed requirement for survey and observation effort, a revision to the effort requirement may be deemed necessary.

STATUTORY DESIGNATIONS

4.40 The Development is not located within or in close proximity to designated areas of national or international importance for birds, such as Special Protection Areas (SPA) or Sites of Special Scientific Interest (SSSI).

CONSULTATIONS

4.41 Requests for ornithological information have been made previously to SNH, RSPB, the South Scotland Raptor Study Group and the Local Bird Recorder. RSPB and SNH advised that they held no systematically collected bird data pertaining to the area but expected that the species of conservation concern most likely to be present were hen harrier, merlin, peregrine, black grouse and short-eared owl.

4.42 RSPB reported that peregrines bred in the area, close to the proposed Black Law Windfarm Extension. Clarification was sought on this issue and in their response RSPB referred to a successful breeding attempt recorded in the area during the 1988-91 Breeding Bird Atlas (exact location unknown) and an unsubstantiated record of successful breeding in 1995, located approximately 2km from the current development boundary.

4.43 SNH reported the presence of a communal hen harrier roost site located close to the area of interest. Clarification was sought on this issue and in their response SNH referred to a roost located approximately 4.3 km from the proposed Black Law Windfarm Extension Phase 1. SNH also highlighted the potential for flight activity over the area by geese flying between Springfield Reservoir (located 3 km south of the proposed windfarm), Cobbinshaw Reservoir (located 9 km to the east) and West Water Reservoir (located 20 km to the east).

DESK-BASED STUDY

4.44 Previous surveys conducted at the consented Black Law Windfarm and the proposed Black Law Windfarm Extension Phase 1 (in the planning process) indicate that the site habitat is dominated by forest plantation, semi-improved grassland, blanket bog and wet modified bog. As part of the development process for Black Law Windfarm a Habitat Management Plan (HMP) was formulated in collaboration with the RSPB and was discussed with land owners and land agents. This Plan is currently being implemented by the Habitat Management Group.

4.45 Breeding and non-breeding bird surveys of the existing Black Law Windfarm were undertaken in 2001 and reported in the Black Law Birds Technical Appendix (2001) and the Black Law Windfarm ES, Ornithology Report (2002).

4.46 In accordance with the planning conditions for Black Law Windfarm, annual breeding and wintering bird monitoring of the Habitat Management Area (HMA) has been carried out. Breeding birds surveys were conducted by RPS Consultants in 2004, 2005 and 2006, although not all areas within the HMA could be accessed due to construction of the windfarm and habitat management activity, especially deforestation. This makes comparison of breeding species' numbers between years difficult. Initial results, however, indicate that some wader species are starting to colonise felled forest areas. No black grouse were observed in any year.

4.47 In respect of non-breeding birds, the HMA was monitored on seven dates between Nov 2004 and March 2005.

4.48 Long-eared owls were recorded on four dates and it was estimated that at least six birds were present at roosts in Feb 2005. As noted in the Black Law Environmental Statement (2002) this population is resident and likely to be regionally important. No merlin or peregrine were recorded. No black grouse or evidence of black grouse occupation was recorded.

4.49 Breeding and non-breeding bird surveys of Black Law Windfarm Extension Phase 1 were undertaken in 2006 and 2007 and reported in the Black Law Windfarm Extension Birds Technical Appendix (2007) and the Black Law Windfarm Extension ES, Ornithology Report (2008).

4.50 In 2008 and 2009, surveys were undertaken to determine the presence of breeding Annex 1 and Schedule 1 birds at the site.

4.51 The only species listed on Schedule 1 recorded during the above survey periods was merlin. In each of the years 2007, 2008 and 2009, an occupied merlin nest was located and monitored by NRP. All three different nest sites were located within the proposed current development boundary.

4.52 No black grouse, breeding peregrine or barn owl have been located during any of the above surveys.

4.53 A summary of surveys previously conducted at the consented Black Law Windfarm and the Black Law Windfarm Extension Phase 1 is given below:

Black Law Windfarm		
Date/Surveys	**Hours**	**Period**
2001		
4 - GVPs	96.0	April- July
Migration watches	n/r	
Winter transects	53.5	Jan, Feb, Nov, Dec
A1/S1 searches		
2004-05		
Winter transects	61.0	Nov 04-Mar 05
Moorland Bird Survey		May and June 2004
Moorland Bird Survey		May and June 2005
Black Law Extension Phase 1*		
2006-07		

6- GVPs	290.0	June 2006 - Aug 2007
Migration watches	43.0	Spring- 27hrs Aut 16hrs
Winter transects	41.0	Sept 2006- Mar 2007
A1/S1 searches	16.0	June 2006 - Aug 2007
* incorporated Black Law		
2008		
A1/S1 searches	32.0	Apr- July 2008
2009		
A1/S1 searches	21.0	Apr- July 2009

Source: NRP, 2010

SURVEY RATIONALE

4.54 Indications from previous surveys at the existing operational Black Law Windfarm and Black Law Windfarm Extension Phase 1 sites are that most of the Development probably holds a bird community typical for the habitat and hence the working hypothesis is that much of the Development is not of any marked regional importance for raptors, waders or migratory birds. On this basis, it is proposed to conduct a 12-month programme of survey.

4.55 This, in turn, has dictated the approach to the initial level of effort required on, for example, Vantage Point (VP) watches.

4.56 A 12-month programme of VP watches will be instigated. This will involve a total of 79 hours from each of 4 VPs. Further detail regarding the hours of observation is given in “Flight Activity Survey” below.

4.57 Additional migration VP’s will be established during the main spring and autumn migratory periods (March-April and September-November) to increase survey effort in order to record migratory species such as geese. Although existing information suggests that the site is not important as underlying a migratory route, due to precautionary measures a reduced programme of VP observations will be conducted during the main spring and autumn migratory periods.

4.58 Targeted surveys to establish the breeding distribution of scarce breeding birds and diurnal raptors will be undertaken within distance buffers around the Development appropriate to the ranging behaviour of the species concerned. Proposed surveys will cover all species considered likely to breed in the area including goshawk, merlin and peregrine.

4.59 Although previous surveys have not detected barn owls in the area, surveys to locate barn owl nest and roost sites will be undertaken.

4.60 Previous surveys have not found any evidence of the presence of black grouse. However, as a precautionary measure surveys will be conducted in spring to establish the presence of lekking birds.

4.61 Birds of open ground habitats will be surveyed using a modified Brown and Shepherd, (1993) method.

4.62 Surveys to assess the abundance of prey items for raptors (field voles, meadow pipits and skylarks) will be undertaken.

Potential Effects

4.63 Windfarm developments have the potential to affect birds through direct loss of habitat, displacement of birds to less suitable habitats and collision with turbines. However, RSPB state; "The available evidence suggests that appropriately positioned windfarms do not pose a significant hazard for birds"[15]. It is SPR's policy to avoid designated areas where development will have an unacceptable impact on the designated interest and where mitigation measures are likely to be unacceptable.

4.64 Evaluation of the bird survey results will be required to make judgements on the likely effects these proposals would have on protected species and other species of nature conservation importance. Relevant organisations such as SNH and the RSPB will be consulted during this process as the EIA progresses.

4.65 A list of all relevant guidance for the assessment of ornithology is given in Section 8 B.

Ecology

4.66 The ecology section of the ES will cover habitats, mammals, fisheries and protected species.

Baseline

4.67 Table 4.48 is a listing of designated sites within approximately 10km of the Development.

[15] RSPB Information: Wind farms and birds, February 2004.

Table 4.48: Designations approximately 10 km from the Development		
Description	Designation	Approximate distance to Development (centre of Site)
Allanton	HDGL	4 km to the West
Braehead Moss	SSSI/SAC	7.9 km to the South East
Clyde Valley Woods	SAC	9 km to the South West
Cleghorn Glen	SSSI	10 km to the South
Cranley Moss	SSSI/SAC	9.6 km to the South
Fiddlers Gill	SSSI	10.5 km to the South West
Garrion Gill	SSSI	8.7 km to the South West
Gillsburn and Mare Gill	SSSI	10 km to the South West
Hassockrigg and North Shotts Mosses	SSSI/SAC	5.3 km to the North
Lee Castle	HGDL	10 km to the South
Jock's Gill Wood	SSSI	8.6 km to the South West
Milton Lockhart Wood	SSSI	9.5 km to the South West
Skolie Burn	SSSI	10.5 km to the North East
Townhead Burn	SSSI	10 km to the South West

4.68 Habitats in the Development are dominated by coniferous plantation, peatland and freshwater. Habitats have been modified and degraded by drainage and afforestation.

4.69 An initial site walkover was undertaken in February 2010. This work confirmed the presence of extensive peatland habitats. Large areas of these have been heavily modified by afforestation.

4.70 In addition to direct and indirect affects within the Development, there are potential effects on downstream-protected habitats and species.

Potential Effects

4.71 There will be some change to, and loss of, areas of vegetation and plant communities within the Development due to the siting of turbines and other infrastructure. This will be assessed in the light of detailed botanical,

hydrological and/or ground condition information for the Development site, and mitigation measures proposed to limit these effects.

4.72 Habitats on the Development site will be surveyed using methods that follow accepted best practice and up-to-date industry standards. In addition, walkover surveys of the Development, biological records and consultations with relevant organisations will be used to determine the extent of any additional surveys for protected species that may be present on the Development. SNH and other relevant organisations will be consulted on the methods and scope of all ecological surveys.

4.73 Fisheries and freshwater ecology within and downstream of the Development (including fisheries) can be affected by pollution and disturbance of watercourses/bodies during construction and will be considered in the environmental assessment. SNH, SEPA, Scottish Water and the local fisheries boards (all relevant District Salmon Fisheries Boards) will be consulted on these proposals and SEPA's Pollution Prevention Guidelines, the Forestry Commission's Forests and Water Guidelines (2003), Forest Nature Conservation Guidelines, and other general best practice will be applied to minimise any effects on the aquatic environment.

4.74 A list of all relevant guidance for the assessment of ecology is given in Section 8 C.

Noise

4.75 Noise can arise from both the construction and the operation of windfarms.

4.76 During windfarm construction, noise can arise from both on-site activities such as the construction of access tracks, turbine foundations, substation buildings etc., and also from the movement of construction related traffic both on-site and travelling on public roads to and from the Development.

4.77 Well established standardised techniques for calculating construction noise levels in accordance with BS5228:1997 'Noise and Vibration Control on Construction and Open Sites' are recommended in Scottish Planning Guidance and will be followed during the EIA.

4.78 During their operation, windfarms have the potential to create noise effects through both aerodynamic noise and mechanical noise. Aerodynamic noise is caused by the interaction of the turbine blades with the air. Mechanically generated noise is caused by the operation of mechanical components, such as the gearbox and generator, which are housed within the nacelle of the turbine. However, the level of mechanical noise radiated from current technology wind turbines is generally engineered to a low level.

4.79 Many windfarms have been constructed within the UK and a better understanding has been gained into what constitutes an acceptable level of noise from these types of development. As a result of that increased understanding, a methodology for assessing the impact of noise from windfarms was formulated by the Department of Trade and Industry. This methodology was developed by a Noise Working Group that comprised a cross section of interested persons including, amongst others, environmental health officers, wind farm operators and independent acoustic experts. The

outcome recommendations are presented in the report ETSU-R-97, 'The Assessment and Rating of Noise from Windfarms'.

4.80 The ETSU-R-97 recommendations provide a robust basis for assessing the noise implications of an operational wind farm and have become the accepted standard for such developments within the UK. Indeed, the use of ETSU-R-97 is recommended as the appropriate good practice for the assessment and rating of windfarm noise in Planning Advice Note PAN45 'Renewable Energy'.

4.81 The area within which the Development will be located is relatively sparsely populated with the nearest communities being Allanton, Shotts, Fauldhouse and Forth. There are also a number of individual properties near the Development, which will be taken into account during the EIA process.

4.82 A list of relevant guidance for the assessment of noise is given in Section D of Section 8.

Hydrology and Ground Conditions

4.83 This section will cover the assessment of hydrology, geology, water quality and ground conditions. Effects relating specifically to fisheries and freshwater ecology will be considered within the ecology chapter.

4.84 The Development geology is a principal contributor to soil type, hydrology and vegetation cover. Hydrological surveys for the Development will take place within the environmental assessment process to consider how construction works may alter any surface or subsurface drainage patterns.

4.85 Potential effects on hydrology (including private water supplies) will be fully assessed during the EIA. In particular, effects on: watercourses; peatland hydrology; and private water supplies will be surveyed. Potential hydrological impacts from borrow pits will also be investigated.

4.86 It is anticipated that the Development will have limited effects on the hydrology of the area. Minor effects on the hydrogeology might be expected due to the turbine foundations, bases and access tracks disrupting near surface groundwater flow paths. This may be more significant where turbines are located on peatlands.

4.87 The upland plateau on which the Development is located is characterised by areas containing peatlands. The effects of the Development on these peatlands will be assessed, in particular any potential effects on the hydrological integrity of peatland units and the risk of peat slide.

4.88 On-site track design will be addressed as part of the EIA process and with the aim of mitigating potential disruption of groundwater flows. Road drainage will also be designed to have a minimal effect on the hydrology.

4.89 Potential effects on the surface and groundwater environment may also occur as the result of erosion or sedimentation associated with construction operations, accidental spillages, or tree-felling. These will be addressed by following best practice guidance together with appropriate pollution prevention plans.

4.90 Mitigation strategies will be devised by following best practice guidelines including SEPA's Pollution Prevention Guidelines, the Forestry Commission's Forests and Water Guidelines and Forest Nature Conservation Guidelines. Mitigation measures may include the use of silt fences and settlement ponds if appropriate.

4.91 A list of all relevant guidance for the assessment of hydrology and ground conditions is given in Section 8 E.

Archaeology and Cultural Heritage

4.92 For the purposes of this document, 'cultural heritage' resources include World Heritage Sites, Scheduled Ancient Monuments, other archaeological features, listed buildings, conservation areas, historic gardens and designed landscapes, and other cultural heritage designations.

4.93 An initial search of Historic Scotland records shows that there are no Schedule Ancient Monuments within the Development.

4.94 There is a listed building (Auchterhead Muir, Covenanters Monument, Darmead-Lin) situated to the south of the Development.

4.95 There are two (Allanton and Lee Castle) Historic gardens and Designed Landscapes founding within 10 km of the Development.

4.96 The proposed approach for the archaeological assessments is as follows:

(a) An assessment of the impact of the proposal by a comprehensive study of the direct impacts of the turbines, access roads, etc within the Development area;

(b) An assessment of the impact of development on significant sites in the zone of visual impact up to 5km from the Development; and

(c) An assessment of the visual impact on very significant sites within the ZVI (e.g. those of national importance up to 35km from the Development).

4.97 A full search for Scheduled Ancient Monuments, other archaeological features, listed buildings; conservation areas, historic gardens and designed landscapes, and other cultural heritage designations within the Development area will be made during the EIA.

4.98 Effects on the settings of these features will be considered in conjunction with the landscape and visual impact assessment methodology.

4.99 Archaeological sites and monuments without statutory protection are curated by planning authorities. The relevant Structure Plans will contain recommendations relating to the conservation of heritage resources of regional significance. SPP (2010) and PAN 42 (1994) provide planning policy guidance and advice on the treatment of this resource.

4.100 Construction of the Development has the potential to disturb or damage archaeological remains or features of cultural heritage. The presence of the Development may also indirectly affect the setting or amenity of a particular

site. Both these direct and indirect effects on any such features present within the Development will be addressed during the EIA process.

4.101 Field reconnaissance of the Development may potentially lead to the discovery of previously unrecorded cultural heritage sites, which may in themselves present constraints.

4.102 Previous experience indicates that it is likely that, even if archaeologically sensitive areas are located, minor adjustments to design and the adoption of sensitive construction practices can often provide full mitigation.

4.103 A list of all relevant guidance for the assessment of archaeology and cultural heritage is given in Section 8 F.

Traffic, Access and Transport

4.104 Given the scale of the Development there are likely to be some transport effects during the construction phase associated with the forestry operations and transport of construction materials and staff. The impacts of traffic associated with the Development will be assessed during the EIA process.

4.105 Preferred access routes will be identified and assessed for traffic management measures to minimise traffic effects on the main public highways. HGV traffic on the public road network will be limited by sourcing stone for road construction, wherever possible, from onsite borrow pits.

4.106 A list of all relevant guidance for the assessment of traffic, access and transport is given in Section 8 G.

Other Issues

Socio Economic

4.107 The list of all relevant guidance for the assessment of socio-economic issues is given in Section 8 H.

Local Communities and Employment

4.108 In terms of local benefits, the Development would provide increased local employment opportunities and revenues, particularly during the construction phase, and longer-term revenues throughout its 25-year life. The socio-economic effects (positive and negative) of the proposed Development will be considered within the EIA.

Tourism and Recreation

4.109 The tourist industry in the area is largely dependent on people's enjoyment of the countryside and outdoor recreational facilities. Whilst the area of the Development is not particularly extensively used for this, it forms part of the wider landscape setting for these activities.

4.110 The wider area within which the Development is located benefits from tourism, attracted to the area for recreational uses.

4.111 The Development may present opportunities to enhance the recreation potential of Muldron and Dura Forests in particular for walking and cycling, through access improvements and forest restructuring. This will be considered during the EIA.

Aviation

4.112 Wind turbines have the potential to interfere with military and civil aviation operations, primarily through effects on radar systems but also in respect of their location within military low flying areas. Various aviation interests, including the Ministry of Defence (MOD) and Civil Aviation Authority (CAA) have joined with the British Wind Energy Association (BWEA) to publish guidance on these issues: Wind Energy and Aviation Interests: Interim Guidelines of the Wind Energy, Defence & Civil Aviation Interest Working Group (DTI, 2002).

4.113 Any potential effects would be fully investigated in the EIA.

Telecommunications and Television

4.114 The experience of existing windfarms is that rotating blades of wind turbines can affect television reception and other communications services, including nearby communications masts. Any interference problems identified during the course of the EIA would be mitigated.

Air and Climate

4.115 On a wider national and global scale, the Development would contribute positively to improved air quality over its operational life and, through reductions in carbon dioxide and other emissions, to global climate change. Renewable energy, in association with energy efficiency and energy reduction, are the primary means by which the Government seeks to meet its national air quality and climate change objectives.

4.116 Construction of the Development is likely to give rise to emissions of dust during construction. It is not possible to completely eliminate these, but the use of best management practices will reduce the risk of dust effects. Windfarm operation generates no emissions to air; therefore local air quality will not be adversely affected during operation.

Likely Main Environmental Effects

4.117 The main effects of the Development on the environment which are considered likely at this stage relate to:

(a) landscape and visual amenity;

(b) ecology;

(c) birds; and

(d) transport and traffic.

Likely Minor Environmental Effects

4.118 It is considered that the following are likely to suffer more limited or no effects:

(a) hydrology;

(b) cultural heritage;

(c) noise;

(d) local communities and employment;

(e) land use and ownership;

(f) tourism and recreation;

(g) aviation;

(h) telecommunications and television; and

(i) air and climate (positive).

Cumulative effects

4.119 Cumulative impacts may arise from other windfarm projects. The proximity, nature and timing of work would need to be considered in the assessment of cumulative impacts.

Mitigation

4.120 The most effective mitigation of the effects of a proposed windfarm is achieved through identification of an appropriate site and evolution of the most appropriate layout.

4.121 In continuing the iterative Development design on this site, SPR and their environmental consultants will combine careful site design with comprehensive mitigation measures to avoid or reduce environmental effects. Where avoidance and reduction are not feasible, measures to remedy any remaining effects will be sought, e.g. careful reinstatement of the site.

4.122 Other than landscape and visual effects (and potentially ecology and ornithology) during operation, the main effects of the Development are likely to arise during construction. Through best construction practice and the implementation of mitigation measures these effects can usually be successfully managed to reduce or avoid effects.

4.123 The Development is located on an afforested upland plateau with mixed age but generally closed canopy coniferous plantation. The proposal would present opportunities to diversify habitats within the forestry and at the forest edges. This could be combined with enhanced habitat management for the benefit of birds and wildlife.

Monitoring

4.124 Where elements of uncertainty remain regarding predicted effects (as part of the full EIA exercise) a monitoring programme and period of review may be required.

4.125 Any requirements for monitoring programmes will be discussed with the relevant regulatory authority and committed to as part of the ES. It would be expected that monitoring commitments would become subsequent consent conditions.

Environmental Management Framework

4.126 It is acknowledged that the prevention or control of impacts depends not only on the implementation of mitigation and monitoring measures, but also good design and continual iteration between all studies. These will include engineering design, construction and operation activities and technical criteria. Constant review of development proposals will be an important element, and will be the precursor to successful consent and development.

Scoping Question: Have the most likely and significant effects been identified through this analysis?

Scoping Question: Are there any others that should be considered for inclusion in the full assessment process and if so why?

5 DRAFT OUTLINE OF THE ENVIRONMENTAL STATEMENT

5.1 It is proposed at this stage that the ES will comprise a single A3 document combining text and A3 illustrations. A separate A4 Non-Technical Summary of the information contained in the ES will also be provided.

5.2 Detailed specialist reports will be available as a separate Technical Appendix. This will not form part of the ES, but will be issued to all statutory consultees and be available to others on request.

5.3 A separate Planning Statement will be prepared in support of the application for consent. The Planning Statement will not be part of the ES. It will discuss the energy and environment policy origins of wind energy development, the Government's policies towards renewable energy development and the national and local planning policy context for the Development at the time of application.

5.4 It is proposed the text of the ES will be divided into 2 parts, broadly as described below.

Introduction

5.5 Part 1 of the ES will comprise five chapters, as follows:

Chapter 1 will provide an introduction to renewable energy development and wind power in particular. It will give a brief description of the site, proposed Development and the potential benefits of the Development in terms of avoided emissions.

Chapter 2 will include an overview of the impact assessment methodology used by the team, including scoping and consultation responses and the identification of key environmental effects. The ES structure will be provided in this chapter.

Chapter 3 will describe the Development selection process and the main reasons for the choice of this site, taking into account the environmental effects. This chapter will include the design strategy and the development of the layout and will describe the way in which mitigation of environmental effects has been considered during the site selection, windfarm design and EIA process.

Chapter 4 will provide a description of the Development. This will include details of the size, layout and design of the turbines, access tracks, borrow pits, control building/sub-station, and all other associated infrastructure. Temporary infrastructure, for instance, laydown areas and site compounds will also be included. This chapter will also outline the construction and operational and decommissioning requirements of the project. Details of the forestry proposals will, most likely, also be given here, with the effects of these proposals being assessed within each of the specialist subject areas and chapters in Part 2 of the ES.

Chapter 5 will present an overview of the relevant statutory planning guidance (e.g. *Scottish Planning Policy 6: Renewable Energy* and *Planning Advice Note 45 (2002): Renewable Energy Technologies*) and Development Plan policies, which apply, to the Development.

Part 2: The Environmental Impact Assessment

5.6 Part 2 will contain a number of chapters reporting the findings of the EIA.

5.7 The topics which will be addressed in the ES are listed below, in the order in which it is currently envisaged that they will appear in the ES:

(a) landscape and visual;

(b) ornithology;

(c) ecology;

(d) noise;

(e) hydrology, hydrogeology and geology;

(f) archaeology and cultural heritage;

(g) traffic, transport and access;

(h) other issues (aviation, telecommunications/tv, other infrastructure, shadow flicker, air & climate, and, safety & security).

5.8 Each of these 'assessment chapters' will be prepared by the relevant expert environmental consultant(s). SPR has expertise in windfarm development, construction and operation, and additional specialist input would be utilised during the EIA as required.

5.9 The assessment chapters will be structured using the same format, where practicable. Each chapter will begin with a brief introduction. This will be followed by a description of the method of assessment for the particular topic under discussion. This will include an outline of relevant consultations undertaken, documentation studied and the means of defining the study area for that topic. Should there be any difficulties (technical deficiencies or lack of know-how) encountered in compiling the required information, this will be noted.

5.10 The existing baseline conditions for the topic will then be described

5.11 An assessment will then be made of the nature, magnitude, duration and significance of the likely effects of the construction, operation and decommissioning of the Development on the topic. Mitigation measures that have been committed to will be taken into account in the assessment. These mitigation measures would be used to avoid, reduce and remedy the effect, where practical. An assessment will be made of the significance of the likely residual effect, following mitigation.

Confidential Annex

5.12 A confidential annex will contain any sensitive, confidential information, e.g. ornithological information. Initial circulation will be restricted to SNH and RSPB, as appropriate, with circulation to other parties subject to agreement by both organisations.

6 CONSULTATION STRATEGY

6.1 It is understood and acknowledged that a well considered and implemented consultation strategy initiated at the start of the EIA process is a vital tool in the successful development of a project. The primary aim of any such strategy should be to inform, engage and resolve.

6.2 By conducting the exercise as early as possible, the overall project planning and design can take account of any alterations or measures that will act to resolve potential issues and minimise possible impacts of the proposed development.

6.3 The need for effective public participation is identified throughout relevant legislation and planning guidance.

6.4 The Public Participation Directive (PPD) (Directive 2003/35/EC) was issued by the European Commission in order to provide members of the public with opportunities to participate on the consenting and ongoing regulation of certain categories of activities within Member States. Such opportunities are provided through access to information, justice, and through consultation on certain key documents.

6.5 The Directive makes specific changes to the way in which EIA is undertaken, and the EIA Directive[16] has been amended to incorporate these requirements.

6.6 PAN81 was released by the Scottish Executive in 2007 to provide guidance to local authorities and developers when engaging communities through the planning process.

6.7 The implementation of the Planning (etc) Scotland Act 2006 has resulted in large changes to the planning system in Scotland. One of the main drivers for these changes is the recognised need for greater public involvement and consultation in the planning system.

6.8 Although Section 36 applications do not require this act, it will be undertaken as part of the EIA process. The new Act requires applicants to undertake pre-application consultation with local communities before submission of a planning application.

Project Approach

6.9 The consultation strategy proposed for the project will consist of open engagement with stakeholders via:

(a) communication (the dissemination of project information); and
(b) consultation (opportunity for stakeholders views to be reported, discussed and considered).

[16] Council Directive 85/337 on the effects of certain public and private projects on the environment as amended by 97/11/EC (and 2003/35/EC)

6.10 Communication will be facilitated by various approaches including this Scoping Report and may also include Public Information Days and Leaflets.

6.11 The consultation exercise provides an opportunity for organisations to raise concerns or issues with regard to the proposed development that they would like to see addressed as part of the EIA. They can also provide local and specialised information or advice to assist the compilation of the ES. Any such advice in conjunction with the feedback on concerns will help to define the approach and scope for the assessments undertaken during the EIA.

6.12 Non-statutory bodies and individuals will not automatically be consulted by the determining authority. However, these bodies and individuals may also possess local knowledge and information useful in compiling the ES.

6.13 Through this scoping exercise and a consultation process undertaken by SPR and topic specialists, input will be invited from non-statutory consultees and individuals to inform the development of the windfarm. The scope of works detailed in the above Chapters is therefore not exhaustive and will be subject to further consideration by SPR, the project team and consultees.

6.14 The list of consultees to be consulted during the Scoping Exercise is presented in Section 9.

Scoping Question: Does the list of proposal consultees reflect the range of stakeholders that should be considered as consultees for this project?

Scoping Questions

6.15 The complete list of the scoping questions that have been presented within this report are detailed below. When providing comment and feedback it will be very helpful if these questions are considered.

Scoping Question: Have all regulatory requirements that the project should be taking into account been identified?

Scoping Question: Do the requirements outlined for assessment of effects look appropriate and complete?

Scoping Question: Are there any other key sources of environmental information that should be consulted?

Scoping Question: Have the most likely and significant effects been identified through this analysis?

Scoping Question: Are there any others that should be considered for inclusion in the full assessment process and if so why?

7 FURTHER INFORMATION

7.1 The scope of works detailed in the above sections is not exhaustive and will be subject to further consideration by SPR, the specialist consultants and consultees.

7.2 SPR invites consultees to comment on the findings of this scoping exercise, provide comment on the methodologies proposed and identify any concerns that they consider have not been addressed in this document and provide details of any relevant environmental information that would inform the assessment. This information will then be considered to influence the scope and approach to the EIA.

7.3 SPR is now seeking consultees' views on the Development in order to incorporate these into the EIA process. All responses should be addressed to:

William Black
Scottish Power Renewables
4th Floor, 1 Atlantic Quay,
Glasgow,
G2 8JB

or e-mail response to:

william.black@scottishpower.com

7.4 If you wish to discuss matters in this report in more detail, please do not hesitate to contact SPR on 0141 614 0439 prior to responding to the scoping exercise.

8 APPENDICES: ASSESSMENT METHODOLOGIES

A Landscape and Visual Amenity

A.1 The appointed Landscape & Visual Consultant will have a specific methodology for the assessment of the effects of windfarm development on the landscape and visual resource. The methodology, whilst specific to the assessment of windfarms, recognises and respects the advice contained within:

(a) National planning policy, guidance and best practice;

(b) 'A Guide to Assessing the Cumulative Effects of Wind Energy Development' ETSU W/143/00538/REP (2000);

(c) 'Guidelines for Landscape and Visual Impact Assessment Second Edition' The Landscape Institute and Institute of Environmental Management and Assessment (2002);

(d) 'Landscape Character Assessment Guidance for England and Scotland'. Scottish Natural Heritage and The Countryside Agency (2002);

(e) 'Visual Assessment of Windfarms Best Practice' University of Newcastle for Scottish Natural Heritage (commissioned report F01AA303A) (2002);

(f) 'Cumulative Effect of Windfarms; Guidance' Scottish Natural Heritage, (2003);

(g) 'Guidance for the Assessment of Cumulative Landscape and Visual Impacts arising from windfarm developments', Scottish Natural Heritage, 4th Draft, (May 2004); and

(h) 'Guidelines on the Environmental Effects of Windfarms and Small Scale Hydroelectric Schemes' Scottish Natural Heritage (2001).

(i) 'Assessing the Cumulative Effects of Onshore Wind Energy Developments', Scottish Natural Heritage, Version 3 (November 2009).

(j) 'Siting and Designing windfarms in the landscape', Scottish Natural Heritage, Version 1 (December 2009).

A.2 The assessment will also draw on SNH's Landscape Character Assessments, and other information provided by consultees.

Study Area

A.3 The Study Area for the assessment of landscape and visual impacts is defined as the area containing all of the likely significant effects of the proposals on any element of the landscape.

A.4 Published advice and guidance and the experience of SPR in developing and operating windfarms indicates that an appropriate study area for the

assessment of visual impacts should extend to 35km from the respective edges of the Development in all directions.

A.5 The approach to the assessment is however flexible, and if potential significant effects are identified at or close to the edges of the study area during the assessment process this will be incrementally extended such that it contains all of the likely significant effects identified.

Assessment Methodology

A.6 The methodology will include desk-based studies, consultation, field surveys and the assessment of potential effects. Several analysis tools will be employed including:

(a) viewpoint analysis based on key viewpoints identified in consultation with consultees;

(b) wireline drawings;

(c) photomontages; and

(d) zone of visual influence maps.

A.7 The assessment will consider the cumulative landscape and visual impacts of the Development in relation to windfarms in the vicinity that have already been built, those with consent and those for which applications for consent have been submitted but are still within the determination process. The location of proposed windfarms which are the subject of formal “Scoping Requests” and those where scoping opinions have been issued will be identified within the assessment although any potential cumulative effects of these will not be assessed as their details are very preliminary and there is little certainty of their development in this form.

A.8 Potential effects will be assessed as being short-term, medium-term or long-term, and permanent or reversible. In the case of this Development for which consent is sought for a 25-year operational life, the effects will in general be considered long-term but reversible. Each effect will be described in detail with reference to its timescale.

A.9 Independent specialist consultants will be appointed to conduct the landscape and visual assessment. The assessment will utilise professional judgement regarding the significance or non-significance of the effects of the proposed development.

A.10 The detailed methodology for landscape and visual assessment, including viewpoints, and the scope of the cumulative assessment will be agreed in further consultation with North Lanarkshire Council, West Lothian Council, SNH and the specialist consultants as relevant.

B Ornithology

METHOD STATEMENT FOR BIRD SURVEYS

B.1 The survey area will encompass the Development. The following surveys will be undertaken in 2009-2010 (a 12-month survey programme will be completed in November 2010):

1. Habitat mapping and initial visits.
2. Moorland breeding bird survey.
3. Flight activity (vantage point watches).
4. Migration vantage point watches.
5. Breeding diurnal raptor survey.
6. Breeding barn owl survey.
7. Black grouse survey.
8. Assessment of field vole abundance.
9. Assessment of skylark and meadow pipit abundance.

HABITAT MAPPING AND INITIAL VISITS

B.2 The Development has already been visited and the habitat assessed for suitability for breeding bird species. A comprehensive habitat map of the area has been drawn up for a 2 km buffer around the Development. This map and visit information will be used to inform the choice of surveys to be completed.

MOORLAND BREEDING BIRD SURVEY

B.3 Open land (to include scrub, isolated trees and copses) will be surveyed using an intensive version of the Brown and Shepherd (1993) method for upland bird survey. The objectives are to map the distribution of breeding territories of birds of conservation importance. The survey aims to cover all areas within 500m of the location of components of the Development, as currently envisaged. The species surveyed will include, but is not restricted to, birds of conservation concern (Eaton, et al 2009).

B.4 Timing: The Development will be surveyed three times, during the period mid April to end June. Fieldwork will not be undertaken in conditions considered likely to affect bird detection for example strong winds (greater than Beaufort Scale Force 4), persistent precipitation, poor visibility (less than 300m), or in unusually hot or cold weather.

B.5 Field methods: Survey walk-routes will be used which optimise ground visibility. Surveyors will pause at appropriate vantage and listening points. Isolated trees, copses and patches of scrub will be approached and

examined. Streams and ditches will be walked. All other areas will be approached to within 100m. Registrations will be mapped at the first location that behaviour indicative of breeding is observed. Care will be taken to avoid recording individuals exhibiting breeding behaviour more than once.

FLIGHT ACTIVITY SURVEY

B.6 The aims are (1) to record flight activity within the vicinity of the proposed windfarm in order to identify areas of greatest importance to birds and (2) to quantify flight activity in the vicinity of the likely turbine locations in order to estimate collision risk. The methods given in Band, Madders & Whitfield (2007) will be used.

B.7 Timing: Watches will be undertaken in each month of the year. A total of at least 79 hours from each of 3 VPs will be completed. Watches will be undertaken in range of weather conditions excepting poor visibility (< 300m) and will be spread temporally to include a representative number of hours early and late in the day.

B.8 Field methods: Information will be collected during timed watches from VPs. During the reconnaissance survey period, trial observations will be conducted from potential VP locations and visible areas will be ascertained using GIS analysis. This will then be used to determine the final VP locations so as to maximize the area visible. Care will be taken to minimise possible disturbance to birds. Normally, all points within the survey area will be within 2km of a VP. For species of high nature conservation importance the following data will be recorded:

1. the flight lines used by individual birds;
2. the time spent flying over a defined survey area; and
3. the proportion of flying time spent at a range of flying heights (<10m, 10-50m, 50-100m, 100-150m or >150m).

B.9 For other selected bird species (secondary species) an index of activity will be calculated based on the number of 5-minute periods that birds are observed. The location of activity indicative of breeding by raptors will be recorded.

MIGRATION VANTAGE POINT WATCHES

B.10 Migration vantage point watches will be conducted during the migration period to assess the importance of the site for migratory wildfowl. Watches will be conducted between March and early May (spring migration) and mid-Sep-Nov (autumn migration). Based on the results of previous surveys, a reduced period of time will be spent on these surveys, and a total of at least 18 hours will be undertaken in each period from one migration watch point, with the viewing direction tailored to the season and thus bird movement (i.e. looking south in spring and north in the autumn). Some observations will be conducted during conditions of low cloud or mist, should these conditions prevail on occasion, as birds will continue to fly in these conditions. Such VP observations will primarily involve auditory records.

BREEDING DIURNAL RAPTOR SURVEY

B.11 The aim is to determine the distribution of breeding attempts of diurnal raptors within and adjacent to the proposed development.

B.12 Field methods: Site visit information and the habitat map suggest that for a 2 km radius of this Development the habitat is potentially suitable for breeding Hen Harrier, Goshawk, Merlin and Peregrine. However, evidence of breeding by any other raptor species listed in Schedule 1 of the Wildlife & Countryside Act (1981) will be investigated thoroughly. Breeding success will also be recorded wherever possible, since it is an important determinant of flight activity levels. Surveys will be undertaken under licence from SNH by experienced field ornithologists. Extreme care will be taken to avoid unnecessary disturbance to breeding birds. Methods will follow those described in Hardey et al (2006).

B.13 Hen harrier: Areas of suitable habitat will be observed during the period 20 March – 30 April and behaviour indicative of breeding recorded. Unsuitable areas include land above 600m; improved pasture and arable land; extensive areas of degraded land with no heather cover and low vegetation; the vicinity of cliffs, rocky outcrops, boulder fields and scree; areas within 100m of hill farms and occupied dwellings. At sites where breeding is suspected, further observations will be undertaken during the period 1 May - 10 June to locate nests. Potential nest areas will be watched for 3-4 hrs if necessary. Occupied nests will be visited at least twice during the period 15 May to 31 July to determine breeding success.

B.14 Goshawk: Suitable woodland habitat will be searched for evidence of occupation by breeding goshawk (e.g. nests, plucked prey, moulted feathers, pellets and faeces) during late March to early April. Potential nesting areas will be re-visited during the period May to August to confirm breeding outcome. Note that surveyors received intensive training on the detection of goshawk signs from Dr M Marquiss during a course organised by Natural Research in March 2004.

B.15 Merlin: Areas of suitable nesting habitat (including forest edge where trees >5m high) will be closely observed during the period 20 March - 30 April. Boulders, fence lines, isolated posts, stone dykes, grouse butts, hummocks, stream banks, crags, trees and recently burnt areas of heather will be checked for signs of occupation (e.g. plucked prey, moulted feathers, pellets and faeces). Any corvid nests detected will be mapped. Areas where merlins are observed or signs are found will be visited at least twice (incl. once in May and once in early Jul) to verify occupation of the site. Potential nest areas will be watched for 4-6 hrs if necessary. All located corvid nests will be visited during the period May-July.

B.16 Peregrine: Potential nest sites will be visited and checked for evidence of occupation in March and April. Sites to be checked will include nest sites found in previous years by raptor study group workers and crags and steep banks identified from OS maps and searches of the survey area. Surveyors will look for birds or signs of occupation (e.g. faecal splash, fresh plucked prey). Occupied sites will be re-visited between 20 March and 10 May to verify incubation. Searches will be made for eyries. Where this is not possible sites will be watched from a suitable vantage point for 3-4 hours or until a nest is located. Further visits will be made during the period 20 May to 10 July to monitor breeding success.

BARN OWL

B.17 The aims of the survey are to determine the distribution and occupancy of potential barn owl breeding sites within 1km of the proposed development.

B.18 Timing and field methods: Each area where barn owls are potentially present will be surveyed twice, once during the period Nov-Jan and once during the period 01 June to 31July. Fieldwork will not be undertaken in persistent precipitation.

B.19 Winter visits will be undertaken at any time of day. The survey area will be searched systematically to locate potential nest sites, including buildings, nest-boxes, trees along woodland edges, and hay-bale stacks.

B.20 Summer visits will be undertaken during late afternoon. Potential nest sites identified during winter will be carefully checked for signs of occupancy by barn owls. Where examination of potential nest sites is inconclusive, the site will be watched at least once from one hour before until one hour after sunset.

BLACK GROUSE SURVEY

B.21 The aim is to estimate black grouse numbers by surveying within 1.5km of the proposed development.

B.22 Field Methods: Initial site visit information and information from the habitat map have identified potentially suitable habitat for black grouse within a radius of 1.5km of this Development. These areas will be surveyed in spring and great care will be taken to avoid disturbing lekking birds. Methods will follow those in Gilbert et al (1998). At other times of year, suitable habitat will be searched for evidence of occupation, (such as feathers and droppings).

Assessment of field vole abundance

B.23 Field voles are important prey for some raptors and owls. Field vole abundance varies spatially and temporally and these changes can influence raptor and owl distribution and breeding success. The aim is to estimate the abundance of field voles in areas of suitable habitat.

B.24 Field methods: Initial site visits and habitat mapping have already been carried out and this has not identified any large areas of grassland suitable for voles. Thus a vole survey will not be carried out at this site. Skylarks and meadow pipits are also an important source of prey for some raptors and these will be assessed – see below.

Assessment of skylark and meadow pipit abundance

B.25 Meadow pipits and skylarks are an important prey item for some raptors. The abundance and distribution of prey items can influence raptor distribution and breeding success. The aim is to estimate the abundance of meadow pipits and skylarks at the site.

B.26 Field methods: A 5km transect line will be established across representative parts of moorland and semi-open habitats on the site. The transect line will be walked twice, once during the period May 1-15 and again during the period

June 1-15 between sunrise and sunrise + 6 hours. Skylarks and meadow pipits will be counted within five distance bands, measured perpendicular to the transect line (0-10m, 11-50m, 51-100m, 101-150m and >150m).

ASSESSMENT OF SIGNIFICANCE

B.27 Impacts will be assessed in relation to the species' population, range and distribution. Key considerations will include territory occupancy, breeding success, foraging success and ranging behaviour. The assessment will:

1 evaluate the relative nature conservation importance of the bird interest in a systematic manner; and
2 estimate the magnitude of likely effects on each species as a result of the development proposals.

B.28 The significance of each potential effect will be judged by integrating scales relating to ecological value, behavioural sensitivity and effects magnitude in a reasoned way, in the context of the status of, and trends within, regional populations (as defined by SNH Natural Heritage Zones). Measures will be presented to mitigate any effects deemed to be significant in terms of the EIA Regulations.

B.29 Cumulative assessment of the impacts of this and other wind farms in the area will be undertaken if required. The methodology for this will be developed in conjunction with the appropriate authorities (e.g. SNH). Input from SNH and other relevant authorities will be required with regard to the area to be considered for the cumulative assessment and provision of appropriate data (access to relevant ES's) for the cumulative impact assessment.

C Ecology

C.1 This section covers all aspects of ecology (habitats, protected species and fisheries etc) with the exception of ornithology, which is dealt with separately. The hydrology of the Study Area will also be considered as it is of relevance to ecology aquatic issues, including peatlands.

Desk Study

C.2 Approaches will be made to SNH and other appropriate bodies who might hold information on the flora, fauna and habitats for the Development (e.g. Royal Society for the Protection of Birds, Scottish Wildlife Trust and local District Salmon Fishery Boards).

C.3 Surveys, detailed below, will be conducted within and adjacent to the Development for habitats and species.

Field survey

C.4 A Phase 1 Habitat Survey for the Study Area will be undertaken. Where appropriate, this work will be augmented with detailed NVC mapping and SNH Upland Habitat Impact Survey. Phase 1 boundaries and target notes may be recorded on maps, and will include any species of interest using a systematic grid where possible.

C.5 A walkover survey of the Study Area, local ecological records and consultations with relevant organisations will be used to determine the extent of any additional surveys required for protected species, or other nationally rare or scarce species, such as salmonids, water vole, bats, otters, badgers and red squirrels which may be present.

C.6 Water quality and aquatic ecology within and downstream of the Development (including fisheries) will be considered within the EIA and the requirement for any freshwater surveys will be discussed with SNH and the local fishery boards.

C.7 Electro-fishing surveys will be carried out where necessary to help identify the baseline conditions in watercourses onsite and downstream of the Development. This will enable the assessment to accurately take into account the sensitivity of these watercourses.

C.8 The extent of all surveys will be agreed between SPR and the relevant consultees, in particular SNH, and will be further informed by observations made during the Phase 1 Habitat Surveys.

Ecological assessment

C.9 The survey results will be used to present a description and map of the habitats found at the Development, and any notable species, which are present. This would form the baseline.

C.10 The Development would then be considered in terms of its effects, quantifying the amounts of habitat loss, temporary disturbance and likely effects on notable species. The significance of effects would be assessed in line with guidelines produced by the Institute of Ecology and Environmental Management. Reference will be made to guidance by SNH.

C.11 A hierarchy of proposals for mitigation will be presented to minimise any significant effects.

D Noise

Assessment methodology

D.1 The detailed study methodology for both the construction and operational noise assessment will be developed in consultation with relevant bodies, in particular the Environmental Health Officers from the relevant Local Authorities.

D.2 Consideration will be given to the potential impact of both onsite and offsite construction activities on sensitive receptors in the area.

D.3 The detailed study methodology for the operational noise impact assessment will follow the guidance given in 'The Assessment and Rating of Noise from Wind Turbines', ETSU Report ETSU-R-97.

D.4 An initial desk study will use noise test reports for a candidate turbine to predict noise levels in the area surrounding the Development, and in particular at any nearby noise-sensitive residential properties. Comparisons will be made with the recognised guidance of ETSU-R-97 to assess the potential impact over the required range of wind speeds. This will be used to determine the need for field monitoring of background noise levels. If the appraisal determines that field monitoring is not necessary, this approach would be agreed with the relevant authorities.

D.5 If a field survey is required, noise measurements will be carried out. Monitoring will be undertaken at a number of noise sensitive locations agreed with the local authorities as being representative of the locality. The actual duration of the background noise monitoring period at each location will be determined by the need to monitor over a representative range of wind conditions.

D.6 The measured background noise levels at each location will be plotted against the concurrent wind speed measured on the Development. Based on these plots a 'prevailing background noise' curve with wind speed will be derived for each location, all in accordance with ETSU-R-97. These background noise curves will form the baseline condition against which the predictions of wind farm operational noise levels are compared to assess and rate the noise.

Relevant Standards and Guidance

D.7 General guidance and policy concerning noise associated with new developments in Scotland is presented in the following documents:

(a) Planning and Noise, Circular 10/1999 (1999); and

(b) PAN56: Planning and Noise (1999).

(c) ETSU-R-97: The assessment and rating of noise from wind farms (1996)

D.8 Specific advice about windfarms, with reference to the potential impact of noise, is included in:

(a) SPP (2010); and

(b) PAN45: Renewable Energy Technologies (1994), with revisions (2008)

D.9 Advice about the impact of noise from construction and quarrying activities is included in:

(a) SPP (September 2010); and

(b) Noise and Vibration Control on Construction and Open Sites (BS5228: 1997).

D.10 The assessment will consider the effects of construction noise, although given the relatively remote location of the Development, it is considered unlikely that this will result in any significant effects.

E Hydrology and Hydrogeology

E.1 The study methodology for the hydrology and hydrogeology assessment will be developed with the specialist consultants appointed for the EIA, in consultation with relevant bodies. The study will involve desk study and field survey within the Development area encompassing turbines, access tracks, and other infrastructure.

E.2 The purpose of the study would be to identify and assess the significance of any potential effects the Development may have on the hydrology including:

(a) private water supplies;

(b) watercourses;

(c) peatland hydrology;

(d) hydrogeology; and

(e) peatslide risk assessment

E.3 Effects relating to freshwater ecology will be dealt with in the ecology section.

Assessment methodology

Hydrology desk study

E.4 The purpose of the hydrological desk study will be to assess the existing hydrology, and to identify any potential effects caused by the Development itself, both during and post construction. The hydrology will be assessed in terms of the natural drainage patterns, baseflows and volumes, runoff rates, peatland hydrology, geomorphology and water quality (including private water supplies).

Hydrogeology desk study

E.5 In order to assess the hydrogeology of the study area, data will be collated from the following sources:

(a) geological maps, both solid and drift geology;

(b) hydro-geological maps;

(c) groundwater vulnerability maps;

(d) soil survey maps;

(e) borehole records held by the British Geological Survey, Scottish Water, SEPA, and the local authorities. This will identify both abstractions in the locality and the current groundwater quality;

(f) Scottish Water Geographical Information System;

(g) SEPA water quality and discharge records; and

(h) Local Authority private water supply records.

E.6 The interaction between groundwater and surface water in peatland and bogs will be considered.

Consultations

E.7 Consultations will be carried out with the following organisations and individuals:

(a) SEPA;

(b) Scottish Water

(c) SNH;

(d) Local Authorities; and

(e) Private Landowners.

E.8 These consultations will, in part, yield some of the above mentioned information required for desk studies, but will also determine the opinions of the interested parties toward the Development with regard to the hydrology and hydrogeology of the area. An important part of the consultation process will be to ensure all relevant information has been gathered and all possible effects on hydrology and hydrogeology have been identified.

Field survey

E.9 Site visits will be carried out, and comprehensive walkover surveys undertaken. A series of peat probing surveys will be undertaken at the Development. The intention is to confirm the major findings of the desk study and to identify any omissions. The field survey will ground truth conditions and identify the nearest watercourses to each turbine and access track. In the event that private water supplies are located within the catchment, these will be visited and the source mapped. Field surveys will also increase the background knowledge of the Development and will aid in the recommendation of mitigation strategies.

Effects

E.10 An assessment will be made of the potential direct, indirect and cumulative effects of the Development. A hierarchy of mitigation strategies will be proposed. Assessment will be undertaken on the basis of the sensitivity of the receptor and the magnitude of the effect. In many cases – such as pollution incidents, the likelihood of an occurrence, in the light of the proposed mitigation measures will also be considered in determining the effect.

E.11 A peat hazard and risk assessment will be carried out for the Development area and will comply with the Scottish Government's "Peat Hazard and Risk Assessment Guide" (2007).

F Archaeology and Cultural Heritage

F.1 The proposed approach for the archaeological assessment is as follows:

(a) an assessment of the impact of the proposal by a comprehensive study of the direct impacts of the turbines, access roads, etc within a targeted study area around the development;

(b) an assessment of the impact of development on significant sites in the zone of visual impact up to 5km from the Development; and

(c) an assessment of the visual impact on very significant sites within the ZVI (e.g. those of national importance) up to 35km from the Development.

F.2 The study would be conducted with reference to the relevant legislative and planning frameworks for cultural heritage. Legislation includes the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas)(Scotland) Act 1997. The primary planning guidance comprises SPP (2010) and PAN 42 at national level, and the Structure Plans and Local Plans at regional and local level respectively.

F.3 For the purposes of the study, cultural heritage resources are likely to include Scheduled Ancient Monuments, other archaeological features, listed buildings and other buildings of historic or architectural importance, conservation areas, historic gardens and designed landscapes, and other sites with cultural heritage designations identified in the relevant Structure and Local Plans.

Assessment methodology

F.4 The aims and objectives of the study are to assess the Development area in terms of its archaeological potential and significance. This will:

(a) identify the cultural heritage baseline;

(b) assess the Development in terms of its onsite archaeology within the context of relevant legislation and planning policy guidelines;

(c) consider the potential and predicted effects of the construction and operation of the development on the baseline cultural heritage resource; and

(d) propose measures, where appropriate, to mitigate any predicted significant adverse effects.

F.5 The methodology will involve desk studies, consultations and field surveys and will fulfil the relevant Institute of Field Archaeologists' Standards.

F.6 Both direct effects within the Development and indirect effects on receptors within the study area will be assessed. The extent of the wider study area will

be determined in consultation with relevant authorities. Cumulative and setting effects will also be considered.

F.7 The assessment of significance of predicted effects of the proposed development on individual cultural heritage receptors will be undertaken using two key criteria:

(a) sensitivity of receptor; and

(b) magnitude of effect.

F.8 Proposals for mitigation will be presented as appropriate. The project archive, comprising record sheets, plans and reports will be deposited with the National Monuments Record of Scotland at the appropriate time.

G Transport and Traffic

G.1 The assessment will address both technical options for access to the Development and the effects of traffic generated during the construction, (including forestry operations) operational and decommissioning phases.

Assessment methodology

G.2 It is anticipated the assessment will comprise desk-based and site surveys to determine the following:

(a) assessment of options for access to the Development from the public highway focusing on existing access points;

(b) baseline survey and characterisation of the existing traffic network, through desk study and site visit;

(c) identification of the characteristics of the proposed access route, current vehicle types and flows, and any constraints;

(d) prediction of likely effects of the development;

(e) input to the design process to mitigate effects; and

(f) description of any residual effects.

G.3 Site visits will be undertaken to inspect the existing access arrangements and characteristics of the road network. This will also determine any upgrading requirements.

G.4 The main likely effects of the proposal are increased traffic flows, or changes to the traffic composition, as a result of traffic movements during construction. Operational traffic is unlikely to give rise to appreciable traffic effects. These changes to the traffic flow and/or composition may result in traffic delay, noise or air quality effects.

G.5 The assessment will be based on guidance given in the Institute of Environmental Assessment's *Guidelines for the Environmental Assessment of Road Traffic*, and *Guide to Transport Assessment for Development Proposals*

in Scotland together with other related technical and planning guidance on traffic assessment (SPP (2010) and Planning Advice Note 75).

G.6 The effects will be assessed through analysis of the traffic flows and composition for the proposed access route.

H Other Issues

H1 Local Communities and Employment

Assessment Methodology

H.1 Based on SPR's detailed knowledge of the employment opportunities provided during the different lifecycle stages of a windfarm, an assessment will be undertaken of the employment opportunities that the proposal is likely to generate. This assessment will primarily relate to the local community, but will extend to any other wider opportunities that may be generated.

H2 Land Use and Ownership

Assessment Methodology

H.2 A desk based assessment of the existing land use of the Development and the immediate area will be undertaken to establish the baseline conditions. This will be supplemented by an indication of the likely changes to this if no development proposals exist.

H.3 Any potential land use changes that will occur as a result of the Development will be assessed in the light of the detailed proposals. In many cases these changes will be described and assessed through the discipline related chapters such as ecology.

H3 Tourism and Recreation

Assessment Methodology

H.4 This assessment will examine the effects of the proposals on the existing recreational activities. Landscape and visual effects on recreational and tourist sites and areas will also be addressed as part of the landscape and visual assessment.

H.5 In the absence of specific guidance on assessment, the approach outlined within "SNH – A Handbook on Environmental Impact Assessment (Appendix 5: Countryside Access Impact Assessment) will be adopted.

H4 Aviation

H.6 Various aviation interests including the Ministry of Defence (MOD) and Civil Aviation Authority (CAA) have joined with the BWEA to publish guidance on

these issues (Wind Energy and Aviation Interests: Interim Guidelines (DTI 2002). SPR has conducted an initial assessment of the potential for adverse effects and consulted in accordance with the advice in this document.

H.7 Further consultation with the MOD, National Air Traffic Services (NATS), NATS En-Route Limited, CAA, and the relevant airport(s), will be conducted as necessary.

H.8 The assessment will clearly identify systems that are likely to be affected by the proposed scheme. Mitigation measures will be identified where appropriate.

Assessment methodology

H.9 The assessment will address the likely effect of the windfarm structures on aircraft safety through:

(a) identification of flight paths in the area; and

(b) identification of any radar signals likely to be affected.

H.10 Assessment of effects on radar operation will be conducted through the analysis of the geometry of the proposed turbine layout, particularly the positions of the turbines relative to the main sources of transmission.

H5 Telecommunications and Television

H.11 The assessment will address the effect of the proposed wind turbines on established and planned radio, television and telecommunications transmission and will include mitigation measures designed to minimise adverse effects.

H.12 A baseline study will encompass:

(a) identification of telecommunications, television and radio signal transmission in the area;

(b) analysis of turbine layout and materials properties; and

(c) further consultation with telecommunications operators as necessary.

H.13 The requirement for and scope of field surveys will be determined on the basis of consultation responses.

Assessment methodology

H.14 Shadows and reflections from the Development may have the following effects on telecommunications:

(a) interference with the reception of terrestrial television and radio services at residences in the surrounding area; and

(b) interference with point to point transmission links operated by telecommunications service providers in the area.

H.15 Effects will be assessed through analysis of the geometry of the proposed turbine layout, particularly the positions of the turbines relative to the main sources of transmission.

H.16 The assessment will clearly identify communities or systems that are likely to be affected by the proposed scheme. Mitigation measures will be identified where appropriate.

H6 Air and Climate

Assessment Methodology

H.17 During the operational phase the Development will not generate any direct emissions to air and therefore local air quality will not be affected by this Development. The assessment will however consider any construction effects and consider the wider implications of the proposals on air quality and climate.

H.18 The positive effect of the Development on climate change in terms of the avoided emissions of greenhouse and other gases will be described.

9 Scoping Consultees

Organisation	
Association of Salmon Fisheries Boards	National Air Traffic Services Ltd
Airport Systems Engineering	National Grid Wireless
Arqiva	North Lanarkshire Council
BAA plc	O2
BBC Research Department	OFCOM
British Horse Society	OFGEM
British Telecommunications (BT)	Orange
Cable & Wireless	Ramblers Association (Scotland)
Central Scotland Forest Trust	RSPB Scotland
Civil Aviation Authority	Rural Scotland
Clyde (and Leven) Salmon Fisheries Board	Scottish Civic Trust
Crown Estate Office	Scottish Council for Voluntary Organisations
Defence Estates	Scottish Government
Five TV	South of Scotland Raptor Group
Forest Enterprise Scotland (Lanark)	Scottish Water
Forestry Commission Scotland	Scottish Wildlife Trust
Forth Salmon Fisheries District	South Lanarkshire Council
Friends of the Earth Scotland	Scottish Environment Protection Agency (SEPA)
Global Crossing (UK) Ltd	Scottish Natural Heritage (SNH)
Historic Scotland	ScottishPower Energy Networks
Health and Safety Executive	T-Mobile UK
HNS Network (c/o Fujitsu Telecommunications Europe Ltd)	Transco
Joint Radio Company	Vodafone
Ministry of Defence	West Lothian Council
Mountaineering Council of Scotland	

Community Councils	
Allanton and Hartwood (No longer exist)	Forth Community Council
Fauldhouse Community Council	Shotts Community Council

Local Councillors	
Cllr Greg McCarra (West Lothian)	Cllr James Robertson (North Lanarkshire)
Cllr Neil Findlay (West Lothian)	Cllr Charles Cefferty (North Lanarkshire)
Cllr Cathy Muldoon (West Lothian)	Cllr Malcolm McMillan (North Lanarkshire)