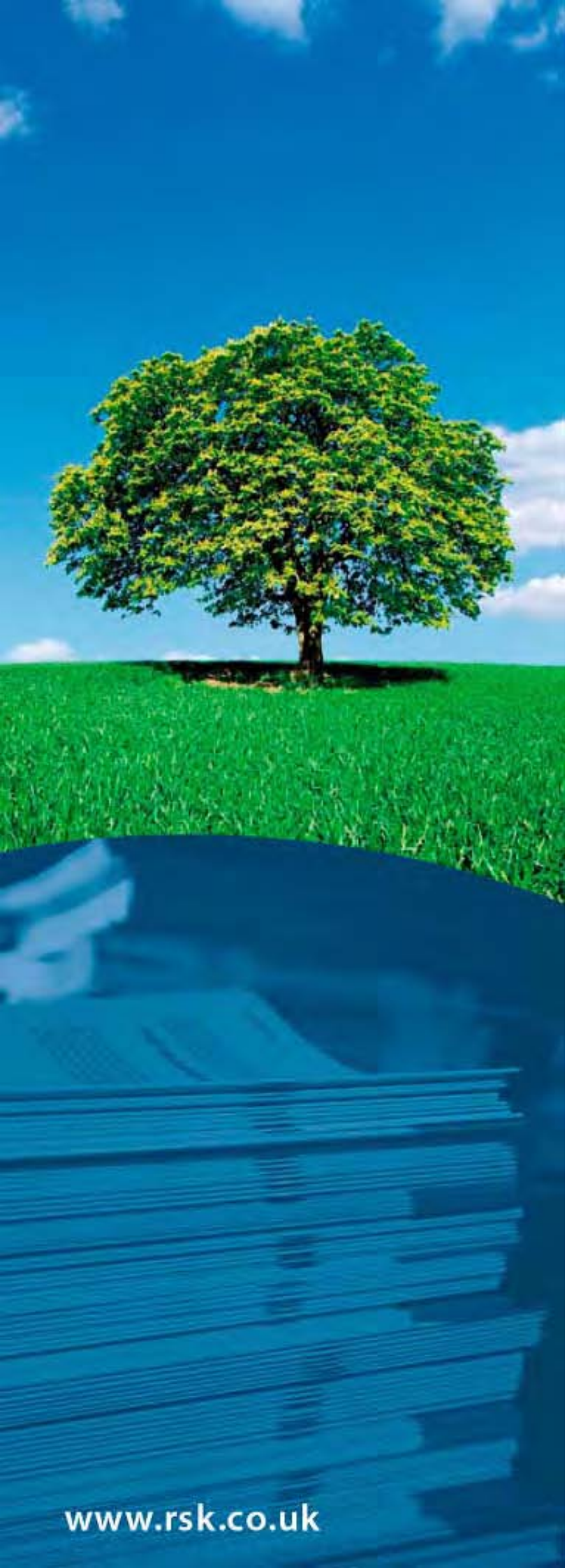


RSK GROUP PLC

Force 9 Energy LLP

Deuchries Wind Farm

Scoping Report

P190283

May 2011

Safeguarding your business environment

RSK GENERAL NOTES

Project No.: 190283/06/01/01 Rev03

Title: Deuchries Wind Farm Scoping Report

Client: Force 9 Energy LLP

Date: May 2011

Office: Glasgow

Author	_____	**Technical reviewer**	_____
Date:	_____	Date:	

Project manager _____

Date: _____

CONTENTS

TABLES

FIGURES

1 INTRODUCTION

1.1 Background

Force 9 Energy LLP (Force 9 Energy) is a dedicated wind farm development company based in and with a focus on the UK market. To date Force 9 Energy has taken 6 developments through planning, three of which will have been consented without appeal or Public Inquiry, one of which was consented on appeal, one which is awaiting determination and one of which was refused after public inquiry. Force 9 Energy is continuing to expand its wind farm development portfolio in response to the Government's targets for energy generation from renewable sources

Force 9 Energy has a joint development agreement with EDF Energy Renewables (EDF). Through the agreement Force 9 Energy leads on the development process of wind farm proposals up to the start of construction. Should a windfarm be consented EDF will take the lead during construction and subsequently own and operate the wind farm. Force 9 Energy is supported by EDF both financially and with staff resources requested by Force 9 on issues such as grid studies, access studies and public relations.

Force 9 Energy is proposing to submit a planning application for the construction and operation of an onshore wind farm at Deuchries, Aberdeenshire 2km north east of Aberchirder (see Figure 1).

RSK Environment Ltd (henceforth RSK) was commissioned to carry out an Environmental Impact Assessment process for the Deuchries project and this report forms the initial part of that process, being a scoping request for the development.

1.2 Requirements of the Legislation

Under the Town and Country Planning (Scotland) Act, 1997, consent to construct and operate the wind farm is required from the relevant planning authority for electricity generation projects that fall below 50 Megawatts (MW). Whilst the precise number of turbines that will operate at Deuchries is not known at the time of writing, it is unlikely that the development will exceed 50MW of generating capacity and therefore likely that an application to Aberdeenshire Council will be required.

The Environmental Impact Assessment (Scotland) Regulations 1999 (the 1999 regulations), as amended, require an Environmental Impact Assessment (EIA) to be

undertaken if the relevant planning authority considers that the proposals have the potential to have a significant effect on the environment. In this case, in recognition of the scheme's scale and nature, Force 9 Energy is seeking to undertake an EIA in support of the application to inform the potential for environmental effects and thereby to inform scheme design.

Whilst not a statutory requirement, as part of the EIA process, Force 9 Energy wishes to seek a formal scoping opinion from Aberdeenshire Council under the provisions of Regulation 10 of the 1999 Regulations. This document is the Scoping Report, which contains the necessary information as required under Regulation 10 of the 1999 Regulations.

The proposed Deuchries Wind Farm is likely to be classed as a "local development" under paragraph 4, Regulation 2(1) of the Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009. Based upon current proposals, statutory pre-application consultation (PAC) with local communities prior to the submission of a planning application would therefore not apply to this development. Nevertheless, Force 9 Energy intends to carry out local consultation and report on this in support of its planning application.

1.3 The Scoping Process

Scoping is undertaken in order to refine the scope of the assessment of environmental impacts and ensure that it is robust in its approach. This will be achieved by inviting the relevant planning authority and consultees to:

- Specify aspects of the environment and issues relating to these that should be considered and addressed in the EIA (with particular emphasis on any issues local to the site);
- Comment on the proposed approach to the EIA;
- Comment on or recommend, where appropriate, assessment methodologies; and
- Highlight other relevant bodies or organisations that may have a vested interest in the scheme or be able to provide relevant information.

Once the Scoping Opinion has been received by RSK (see Section 4 for contact details), the response will be analysed and the relevant points raised taken forward and used to inform the assessment process.

1.4 Document Structure

In accordance with Regulation 10 of the 1999 Regulations, when making a scoping request the developer is required to include:

- *"A plan sufficient to identify the land" (Section 1);*
- *"A brief description of the nature and purpose of the development" (Section 2);*
- *A description of the development's "possible effects on the environment" (Section 3); and*
- *"Such other information or representations as the person making the request may wish to provide or make" (Sections 2 and 3).*

These requirements are addressed in this scoping report as indicated above. Section 4 relates to the procedure for making comments in relation to this scoping exercise. Appendix 1 contains the relevant maps and figures, which are referred to within the relevant sections.

2 PROJECT DESCRIPTION

2.1 Background

This section describes the proposed Deuchries Wind Farm development. A brief description of the site and surroundings is given followed by a description of the components of the scheme. Figure 1 shows the location and boundary of the area under option (project area) and a provisional layout for the development. It should be noted that beyond scoping the design of the development will evolve to take account of constraints and issues raised during scoping, through baseline studies both completed and currently in progress, and through the subsequent iterative assessment of impacts. Such design changes could include an increase in the number of turbines, a decrease in the number of turbines and/or a change in height of wind turbines, either up or down.

2.2 Site Description

The proposed Deuchries Wind Farm is located 2km north east of the village of Aberchirder, Huntly, Aberdeenshire. The larger town of Turriff lies c7 km to the southeast of the site, with Banff and Portsoy c10 km to the northeast and northwest respectively. The project area is split over three farms – Deuchries, Upper Crannabog and North Cranna. The site is bounded on all sides by rolling hills and agricultural land. Part of the site boundary is bordered by the A97, close to Aberchirder. There are a number of small wind farm sites operating and consented within the wider area, the closest of which is the two turbine development at Strath of Brydock c5km to the north and the 8 turbine development at Boyndie Airfield near Banff at c10km to the north.

The area within which elements of the proposed Deuchries Wind Farm may be located will be referred to as “the project area” within this document, and is delineated in red in Figure 1. It is important to stress that it is not considered that all or indeed most of the project area will be proposed for development.

The project area is agricultural consisting primarily of rough or semi-improved grassland. It has its highest point lying in the north west of the site at Black Law, where the land peaks at approximately 244m above ordnance datum (AOD). This is also the highest point in the wider area. The lowest point lies at Mains of Cranna at approximately 130m AOD. Notable peaks within the project area include Cranna Hill (233m AOD), Hill of Deuchries (c230m AOD) and Gallow Hill (c230m AOD). Access to the site will be from the A97 and B9025 just north of Aberchirder.

Watercourses throughout the site drain into tributaries of the River Deveron, namely Rosy Burn in the north of the site, Cunning Burn in the east and Burn of Arkland in the south.

2.3 Project Components

2.3.1 Summary of Key Components

The principal components of the wind farm comprise the following:

- Wind turbines, number currently undetermined but likely to be up to four, each with a capacity of up to 3MW. It is expected that the height to tip will be 110m, with a blade length of 40m;
- Permanent anemometer mast(s);
- Permanent access tracks to gain access to the site and between the turbines;
- A grid connection building and site office.

An electricity transmission line from the site to the local electricity distribution network will also be required, and will be applied for separately by ScottishPower Power Systems. In addition, a temporary construction compound and one or more borrow pits would be required on site for the purposes of construction. Each of these elements is considered in more detail below. Whilst the following information is a description of the likely construction process, it cannot be guaranteed and individual design may vary.

2.3.2 Wind Turbines

The exact number of wind turbines will be determined by how many the site will sensibly support, based on environmental and physical constraints identified during the EIA and design process. The height of each turbine will also be determined as the design process progresses.

It is anticipated that each turbine foundation will require an excavation down to the underlying rock. The detailed design specification for each foundation will depend on the type of turbine procured, and the specific ground conditions at the location of each turbine.

Wind turbines are likely to have external transformers located in kiosks adjacent to each turbine.

2.3.3 Anemometer Mast

The scheme will include permanent anemometer mast(s) located within the site to provide ongoing monitoring of the wind conditions after commissioning of the scheme.

These should not be confused with the temporary anemometer mast that will be employed on the site before any planning consent or construction of the wind farm, and which will be subject to a separate planning application. As with turbine locations, the exact location of the anemometer mast(s) have yet to be finalised, as these will depend on the type of turbine that will be used and the constraints identified during scoping and the iterative assessment. The anemometer mast(s) height will be identical to turbine tower heights. The selection of the mast will take account of the ease of construction and ability to reduce visual impact. Access to the anemometer mast(s) would connect with the main network of site tracks (see below).

2.3.4 Access to Site and Internal Tracks

Access to the site for vehicles delivering turbine components, such as tower sections and blades, will be from the A97 and B9025, just north of Aberchirder.

The design of public road junctions and use of signage will be developed to meet the requirements of the relevant authorities with regard to visibility, construction materials, surface water drainage, gradient and safety of other road users.

Internal access will be via the unclassified road leading north from the B9025 to the settlement of North Cranna. Existing roads and tracks within the site will be used where possible although it is clear that new internal access roads will also be required. The access will be gated to prevent unauthorised vehicle access to the turbine site. Provision for pedestrian access, however, will be maintained subject to health and safety restrictions during construction.

The tracks will be used by construction vehicles and will be retained throughout the lifetime of the windfarm for use by maintenance vehicles. The width of the tracks will be approximately 5m, although may be wider for short sections, such as at passing places, lay down areas and sharp bends. The surface of the tracks will have a cross fall in order to drain run-off into ditches on the downhill side of the track where necessary, and lateral and cross drains will also be installed where required. Outlets will be suitably located with erosion protection as required.

2.3.5 Burn Crossings

The site contains a number of watercourses (see Section 3.2.6.1). Watercourse crossings may therefore be required on site to facilitate access to the turbines and ancillary development (site offices, anemometer mast, etc).

If required, new crossings will be designed in accordance with Scottish Government best practice and taking due regard of Scottish Environment Protection Agency (SEPA) best practice guidelines to enable the passage of fish and other wildlife. Any upgrades

to existing water crossings that are required will also comply with Scottish Government and SEPA best practice.

Suitable licences under the Water Environment (Controlled Activities) regime will be sought for all works within or adjacent to watercourses.

2.3.6 Grid Connection, and Operations Control Building

Cables from the wind farm will be collected at the grid connection building; will incorporate the switchgear and metering equipment. In addition to the grid connection equipment, a control and metering room, telecommunications equipment, an office, and welfare facilities for visiting staff will be housed. A small car parking area adjacent to the building will also be formed. The grid connection building would comply with the Electricity Safety, Quality and Continuity Regulations 2002, particularly with regard to the installation of safety signs. A location for the grid connection building has yet to be determined and will be informed by the technical requirements of the gird connection and the EIA process.

2.3.7 Internal Cabling

All power and cabling on site from and between the wind turbines will be buried in trenches largely located directly adjacent to the internal tracks. Detailed designs where cables cross watercourses will be agreed with Aberdeenshire Council and SEPA.

2.3.8 Borrow Pits

The project will require some crushed stone to construct new tracks, create hard standing areas for the cranes and lay the foundations. The source of this stone will be considered during the evolution of the site design and impact assessment. A preliminary site investigation prior to construction will be required to establish the quality of the sub-grade and site rock, and the sources and quantity of road stone estimated.

If the stone is suitable, before the excavation of the borrow pits, topsoil will be removed and stored in a mound for use in reinstatement. Following extraction of stone, the floor of the pits will be built up with surplus material excavated during the construction of the access tracks, turbine foundations and hardstanding areas, and the side slopes will be graded to a safe angle to integrate the landform with the adjacent landscape.

2.3.9 Construction Compounds and Work Areas

During the construction period, a construction compound will be required that will include a laydown area. The main construction site office and compound will comprise temporary cabins to be used for the site offices, the monitoring of incoming vehicles and

welfare facilities for site staff including toilets; parking for construction staff, visitors and construction vehicles; secure storage for tools and small parts; a receiving area for incoming vehicles; and security fencing around the compound.

The compound will be used as a storage area for the various components, fuels and materials required for construction. The major structural components of the turbines would be delivered directly to site. Temporary lay-down areas will be provided for parking and unloading delivery vehicles and, in particular, abnormal loads.

The location of a construction compound has not yet been determined and will be informed by the EIA process.

3 ENVIRONMENTAL IMPACT ASSESSMENT SCOPE

3.1 Overall Approach

The EIA will be conducted in accordance with the requirements of the 1999 Regulations. The following key stages will form the basis of the assessment process:

- Consultation with statutory and non–statutory bodies and relevant stakeholders;
- Establishing a robust baseline of the existing environment on and around the site;
- Assessment of the environmental impacts and establishing their significance (primarily the assessment of residual effects once mitigation has been adopted); and
- Formulation of mitigation measures to ameliorate the potential impacts of the proposed development that cannot practically be avoided through site design.

Following established best practice, it is intended that the design of Deuchries Wind Farm will evolve in an iterative manner with the assessment process, led mainly by the consideration of constraints that exist within and around the site (environmental, technical and economic). Once the preferred design is selected, then this will form the basis of the impact assessment. The four key stages of assessment are summarised below.

3.1.1 Consultation

Consultations with relevant authorities, organisations and stakeholders will be undertaken throughout the EIA and site design process, commencing with scoping. The consultations will serve four main purposes:

- To establish a sufficiently robust environmental baseline of the site and its surroundings;
- To identify, early in the process, specific concerns and issues relating to the site and development in order that they can be discussed and accounted for appropriately in the design and assessment;

- To ensure appropriate involvement of the public and authorities in the assessment and design process; and
- To fulfil Force 9's obligations under The Environmental Impact Assessment (Scotland) Amendment Regulations 2006 and The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2008.

Force 9 Energy intends to carry out community consultation with public exhibitions and circulars and would welcome comments on how the community and other stakeholders would prefer to be consulted.

The outcome of the consultation process will be compiled into an Environmental Statement (ES) with the planning application detailing the consultation undertaken and any changes made to the proposal as a result.

3.1.2 Baseline

For each environmental aspect under consideration for the EIA, the environmental baseline of the site and its surroundings will be established (see Section 3.2 below). This will be achieved through consultations with relevant authorities and organisations, a desktop review of available data including that generated from consultations (see Figure 2), and completion of specialist field surveys.

For all environmental aspects, the significance of residual impacts i.e. those predicted once mitigation is taken account of, will form the basis of the assessment. An outline of the proposed methods of assessment for each environmental topic is provided in Section 3.2 below.

3.1.3 Development of Mitigation Measures

Due to the proposed 'constraints-led' iterative evolution of the site design for this development, most mitigation measures are considered likely to be embedded within the design of the site rather than as 'add-on' measures to ameliorate significant environmental effects. The evolution of the design, therefore, will be reported clearly in the ES, including the rationale behind the preferred choice of development design.

All other measures proposed as mitigation for the development will be reported within the relevant section of the ES. The mechanism by which these measures will be carried through to implementation on site will also be made clear.

3.2 Environmental Aspects to be Assessed

3.2.1 Background

This section identifies the environmental aspects that Force 9 Energy proposes to address within the EIA for the Deuchries Wind Farm. It discusses each aspect in terms of a brief summary of the environmental baseline for each (where practical), the relevant potential impacts and an overview of the proposed method of assessment for each one. It should be noted that each aspect will be assessed in the context of a defined study area that is informed by industry guidance, best practice and likely design of the wind farm. The extent of the study area is described in each case below.

3.2.2 Landscape and Visual Assessment

3.2.2.1 Preliminary Environmental Baseline

3.2.2.1.1 Introduction

This scoping report is based on a preliminary field assessment.

For the purposes of scoping, a 35 km study boundary has been applied to meet the requirements of the specific project and its landscape context, and to reflect the likelihood of significant effects arising over long distances. Significant effects over shorter distances will also be given appropriate emphasis.

Figure 3 provides preliminary ZTV that has been prepared to the 35 km study boundary radius, based on turbines with a maximum hub height of 70m and a maximum blade tip height of 110m respectively. Within 10 km of the proposed turbines, the ZTV indicates potential visibility over much of the area, including the settlements of Aberchirder, Turriff, Macduff, Banff and Portsoy. Beyond 10 km the ZTV coverage is fragmented, with large areas outwith the ZTV due to the screening effects of intervening hills such as Knock Hill, Clashmach Hill, The Correen Hills and Bennachie. To the east of the study area, the ZTV indicates potential visibility from the settlements of Turriff and Fintry, to the south potential visibility is indicated in Forgue and South Auchninna and to the west, potential visibility extends across Cornhill and Sillyearn Wood. To the north the ZTV indicates that the coastal areas have little potential visibility aside from the settlements of Whitehills, Portsoy, Banff and Macduff, while beyond 10 km lies open sea.

3.2.2.1.2 Project Area Description

The boundary of the proposed development area is illustrated in Figure 1.

The proposed location of the wind farm comprises smoothly rolling landform with infrequent and rounded hills. Small to medium scale blocks of coniferous planting exist throughout the landscape. Fields tend to be large, and are divided by post and wire fencing or hedges of Gorse. The main village in the area is Aberchirder (approximately 0.2 km southwest of the proposed development site). Elsewhere, farmsteads are a common feature, scattered throughout the landscape. Towards the south, as the distance from the coast increases, the topography becomes more distinctively hilly, with a greater presence of vegetation throughout the landscape.

3.2.2.1.3 Landscape Character Context

With reference to published SNH Landscape Character Assessment documents and GIS data sets, the landscape character of the project area is illustrated in Figure 4.

The proposed development site is located within the Coastal-Influenced Agricultural Land Broad Landscape Character Type (LCT) as defined in the Banff and Buchan Landscape Character Assessment. Within this Broad Landscape Character Type, there occur more subtly different Character Types, defined by landform and landcover. The site falls across two of these character types:

- The majority of the proposed project area falls within The Coastal Farmland (Areas 3: Western Coastal Farmland). '*Characterised by large scale fields in a rolling and undulating terrain with infrequent and rounded hills forming gentle landmarks';*
- A section of the proposed project area to the south falls within the Agricultural Heartland (Area 8: Knock Hill and Aberchirder). '*Dominated by Knock Hill, views from within the lower valleys are enclosed by the smoothly undulating landform. This part of the District has a greater physical resemblance to the more distinctively hilly landscape of Moray than the flatter agricultural plains which typify much of Banff and Buchan.'*

The following landscape character types are located in the vicinity of the proposed development:

- Area 1 – Cliffs of the North and Southeast Coasts
- Area 9 – Upland Ridges South of the Deveron
- Area 12 – Deveron and Upper Ythan Valleys

Guidelines outlining the potential for accommodating wind farm development within Banff and Buchan are described within the Banff and Buchan Landscape Character Assessment document:

'Large-scale windfarm development would be inappropriate in Banff and Buchan, the overall landscape character of this medium-scale, settled and strongly agricultural area being unable to visually accommodate large numbers of turbines. If carefully sited, smaller farms could be accommodated in some parts of the District without detriment to landscape character.'

3.2.2.1.4 Landscape Designations

The designated landscapes identified within the proposed 35km study area are illustrated on Figure 5.

Within 35 km of the proposed development site, four areas are designated as an Aberdeenshire Area of Landscape Significance and two areas defined as a Moray Area of Great Landscape Value (AGLV) three of which lie partially within the ZTV. Thirteen Historic Gardens and Designed Landscapes (HGDLs) have been identified only two of which lie clearly within the ZTV (Backhill and Craigston). 26 Conservation Areas lie within 35 km of the site, of which 6 lie within the ZTV (Aberchirder, Whitehills, Portsoy, Portknockie, Keith Mid Street, Keith Fife Street). The two Country Parks within the 35 km zone lie outwith the ZTV.

3.2.2.1.5 Visual Context

The proposed development site lies between 134m AOD and 240m AOD, within an area of rolling topography. The 35 km study area comprises low lying coastal landscapes to the north with large scale, open agricultural field patterns, through to smoothly rolling and undulating agricultural landscapes in the vicinity of the proposed development site, with the topography becoming more varied towards the south.

The majority of the area within 35 km of the proposed development is relatively sparsely settled, particularly the areas to the southwest and northwest. However, the more densely settled areas are largely located along the coast and along key communication routes. Key settlements include: Aberchirder, Turriff, Huntly, Keith, Buckie, Banff, Macduff, Cullen, Portsoy, Fraserburgh, Oldmeldrum and Dufftown.

Key communications routes include: A95, located a minimum of 4.6 km to the northwest, the A97 forms the western boundary of the proposed development site km, the A98, located a minimum of 6.5 km to the north, the B9023, located a minimum of 1.1 km to the west, the B9025 bisects the southern section of the proposed development site, the B9121 located a minimum of 2.8 km to the east and the A947, located a minimum of 6.8 km to the east of the site.

A railway route traverses the study area, located a minimum of 12 km to the southwest of the proposed development site, running from Aberdeen to Inverness, entering to the southwest of the proposed study area and exiting to the northwest.

Two Sustrans cycle routes exist within the study area, located to the north and east of the study area;

- Route 1 - The Moray Coast Ride (Portgordon to Cullen), located a minimum of 9 km north of the proposed development site and;
- Route 1 - The Aberdeen to John O' Groats route, located a minimum of 4.6 km east and north of the proposed development site.

Further interest will lie in the named and known walks in the area, which include numerous locally important footpaths such as Knock Hill, Bin of Cullen, Balloch Wood, and Bin Forest, along with a number of coastal walks.

There are a number of examples of large scale and / or vertical features within the 35 km study area, principally the existence of turbines and their associated infrastructure such as pylons and pylon lines. Communication masts located on hilltops do occur throughout the study area, however they are an infrequent feature.

3.2.2.1.6 Cumulative Developments

The following potential cumulative wind farms are located within 35 km of the project area. The location of these sites is identified in Figure 6, and detailed in Tables 3.1 to 3.3 below:

Table 3.1 Wind farms within 0-10km of the project area:

	Site Name	Status	Height (to tip)	No. Of Turbines
1	Boyndie Airfield and Extension	Operational	100.5m	8
2	Strath of Brydock and Extension	Operational	98.5m	3
3	Gairnieston Farm	Under construction	99.5m	1
4	Shielburn Farm	In Planning	Unknown	3
5	Muirake	In Planning	Unknown	2
6	Mains of Auchinderran Farm	In Planning	Unknown	3
7	Mossford Farm	In Planning	Unknown	1

Table 3.2 Wind farms within 10km-20km of the project area:

	Site Name	Status	Height (to tip)	No. Of Turbines
8	Balnamoon Farm	Operational	Unknown	1
9	Dummuie	Operational	Unknown	7
10	Glens of Foudland	Operational	78m	20
11	Cairnhill	Operational	Unknown	3
12	Newstead	Operational	Unknown	1
13	Gordonstown Hill	Consented	100m	5
14	Mains of Hatton	Consented	79m	6
15	Castle of Auchry	Consented	Unknown	3
16	Bogenlea Farm	Consented	Unknown	Unknown
17	Little Blyth	Consented	Unknown	Unknown
18	Myreton Crossroads	Consented	74m	1
19	Tillymorgan	In Planning	Unknown	4
20	Cairnhill extension	In Planning	Unknown	3
21	Burnside of Idoch	In Planning	Unknown	3
22	Aultmore	In Planning	Unknown	Unknown
23	Myreton	In Planning	Unknown	Unknown
24	Netherton of Windyhills	In Planning	Unknown	Unknown
25	Camaloun	Scoping	Unknown	Unknown

Table 3.3 Wind farms within 20km-35km of the project area:

	Site Name	Status	Height (to tip)	No. Of Turbines
26	Cairnmore Farm	Operational	81m	3
27	Hill of Burns	Operational	Unknown	1
28	Hill of Eastertown (Mackie)	Operational	70m	3
29	St John's Wells	Operational	80m	3
30	Skelmonae	Operational	77m	4
31	Hill of Balquhindachy (Extension)	Operational	Unknown	2
32	Cowhill	Operational	Unknown	Unknown
33	Newstead (Hill of Burns)	Operational	80m	1
34	House O Hill	Operational	Unknown	3
35	North Redbog	Operational	Hub 55m	2
36	Hill of Towie (Formerly Drummuir)	Consented	100m	21

	Site Name	Status	Height (to tip)	No. Of Turbines
37	Clashindarroch re-submission	Consented	Unknown	18
38	Methlick Farmers Wind Energy Project	Consented	Unknown	6
39	Greenhill Croft	Consented	Unknown	2
40	Hill of Easterton Extension	Consented	Unknown	Unknown
41	West Knock Farm	Consented	84m	3
42	Dalgarno Croft	Consented	Unknown	Unknown
43	West Cockmuir	Consented	Unknown	Unknown
44	Denhill	Under Construction	Unknown	Unknown
45	Haddo	Under Construction	Unknown	Unknown
46	Skelmonae Extension	In Planning	93.5m	3
47	Bogenjohn Farm	In Planning	Unknown	3
48	Wester Buthill	In Planning	Unkown	Unknown
49	Hill of Tillymorgan	In Planning	Unkown	Unknown
50	Old Maud	In Planning	Unknown	Unknown
51	Upper Wheedlemont Farm	In Planning	Unknown	2
52	Hill of Fechel	In Planning	Unknown	1
53	Cairncake	In Planning	Unknown	Unknown
54	West Knock Farm	In Planning	Unknown	Unknown
55	Autygills Farm	In Planning	Unknown	Unknown
56	Clayfords Farm	In Planning	Unknown	Unknown
57	Edintore	In Planning	125m	6
58	Corskie	In Planning	Unknown	4
59	Ardoch Farm	In Planning	Unknown	1
60	Cairnbrogie	In Planning	Unknown	1
61	Mosseye	In Planning	Unknown	1
62	Toux	In Planning	Unknown	1

3.2.2.1.7 Potential Impacts

Types of Impacts:

The proposed wind farm may give rise to potential landscape, visual and cumulative impacts during the construction, operational and decommissioning stages on:

- The landscape fabric and features of the development site;
- Landscape character;

- International, National and Local Landscape Designations (Aberdeenshire Areas of Local Significance, AGLVs, & GDLs identified above);
- Sense of scale;
- Sense of distance;
- Existing focal points in the landscape;
- Skylining;
- Sense of remoteness or wildness (including wild land search areas);
- Special landscape interests; and
- Key visual receptors including statutory and non-statutory designated or protected areas, cultural heritage resources, residential properties and farmsteads, recreational/tourist resources, sequential routes, panoramic hilltop views, focused or directed views along glens, coastal and water based receptors, and cumulative views.

3.2.2.1.8 Key Issues

The review of baseline conditions based on desk and preliminary field study has identified the following as issues that will require consideration in the landscape, visual and cumulative assessment.

- The physical impacts of the proposed turbines, ancillary buildings, and access tracks to landscape features and fabric (including areas of commercial forestry in the vicinity of turbine positions and the access track);
- The landscape character of the study area – impacts within the immediate local landscape and the wider 35km study area (this will include consideration of the capacity of the Fringe landscape to accommodate turbine development);
- Settlements in the surrounding area - visual effects at both individual properties and larger settlements. The preliminary ZTVs indicate that the key visual impacts may be experienced from individual properties in close proximity to the project area, and settlements including Aberchirder, Turriff, Keith, Banff, Portsoy and Cuminestown. Variations in the degree of visibility of the turbines at these properties will be considered.
- The wider landscape – longer distance views such as those on hilltops. These include Knock Hill, Bennachie and Clashmach Hill;

- Area of Great Landscape Value (AGLVs) - views from within these areas, as well as more general effects on the character of the landscape within these areas. The preliminary ZTV (refer to Figure 3) indicates there will be localised visibility of the proposed development site from the south, north and east of the Moray AGLV (near the settlement of Milltown of Rothiemay), located approximately 3.9 km to the southwest. In addition, approximately 24.5 km southeast of the site, the Moray AGLV (near Dufftown), may experience limited and localised visibility, particularly to the east of the AGLV;
- Aberdeenshire Area of Landscape Significance – Four areas designated as Aberdeenshire Areas of Landscape Significance lie within the 35 km study area, one of which lies within 10km of the proposed development site (approximately 2.3km east, southeast and south of the boundary of the proposed site). The preliminary ZTV indicates that within the designation located within 10km of the study area, there will be widespread visibility of the proposed development, particularly to the south and east of the designation. The remaining designation areas lie to the southwest (approximately 19.7km), south (approximately 24km) and southeast (approximately 22.5km) of the proposed development site. Visibility in these areas is very limited, occurring only in small localised areas;
- Gardens and Designed Landscapes – The preliminary ZTVs indicate that the proposed development may give rise to impacts on 5 of the 13 identified GDLs within 35km of the project area as follows: Duff House; Haddo House; Fyvie Castle and the Old Manse of Marnoch. Many of the designated landscapes are either not accessible to the public, or screened by perimeter estate;
- Conservation areas – The preliminary ZTV indicates that visual impacts may be experienced within a number of Conservation areas within the 35 km study area, including the town centre of Aberchirder, and the settlements of Banff, Whitehills and Portsoy;
- Major transport routes – the main routes through the study area principally form connectivity to the larger settlements located along the coastline and to the west, towards Inverness. The sequential views along the A95, the A97, the A98, the A947, the B9023 and the B9025 are all considered within the assessment;
- Footpaths and cycle routes – including Sustrans Route No 1 which traverses the study area, as well as locally important routes, including the numerous coastal walking routes and local routes through the forests and hills;

- Cumulative assessment – the cumulative assessment includes views where a combination of one or more wind farm developments can be viewed simultaneously; and,
- The layout and design of the proposed wind farm. SNH guidance document, 'Siting and Designing Wind Farms in the Landscape', (Version 1, December 2009) will be referenced in order to consider the issues relevant to Deuchries.

3.2.2.2 Method of Assessment

3.2.2.2.1 Approach

Landscape and visual assessments are two separate, but interlinked, procedures. The baseline landscape, its analysis, and the assessment of character contribute to the baseline for the visual assessment. Assessments are undertaken in parallel and are informed by a combination of desk-based and site-based appraisal techniques, and professional judgements.

There are six key stages to the overall assessment process.

- Recording and analysis of the existing landscape fabric, landscape character and visual context associated with the project area through desk based and field based appraisal;
- Appreciation of the nature, forms and features of the proposed scheme;
- Assessment of the sensitivity of the existing landscape and visual receptors to change, and the magnitude of change likely to result from implementation of the proposed scheme;
- Evaluation of the significance of the changes identified;
- Identification of mitigation measures appropriate to the proposed scheme and the receiving landscape;
- Assessment of the residual effects on landscape character and visual amenity.

In establishing the baseline conditions, the assessment takes account of the presence of operational wind energy developments, and those currently under construction.

The assessment process is iterative, in which the analysis of baseline conditions and the evaluation of potential effects resulting from proposed scheme implementation can inform the evolution of the design, layout and configuration of turbines, and the development and incorporation of mitigation measures.

The Landscape and Visual Assessment (LVIA) and the Cumulative LVIA (CLVIA) are based on relevant and accepted guidance, and draws on information provided by statutory consultees, current landscape planning policies and other relevant documentation, computer based visibility analysis and fieldwork observations.

3.2.2.2.2 Guidance

The assessment will be undertaken in accordance with the methods outlined in the following best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment (Second Edition), published by the Landscape Institute and the IEMA (2002). (GLVIA)
- Landscape Character Assessment: Guidance for England and Scotland, published by Scottish Natural Heritage and the Countryside Agency (2002).
- Techniques and Criteria for Judging Capacity and Sensitivity. Topic Paper 6, published by Scottish Natural Heritage and the Countryside Agency (2004).
- Guidelines on the Environmental Impacts of Wind Farms and Small Scale Hydroelectric Schemes, published by Scottish Natural Heritage (2001).
- SNH Guidance Cumulative Effect of Wind farms Version 2 revised 13-04-05.
- Visual Representation of Wind Farms: Good Practice Guidance, published by Horner and Maclennan and Envision (2006).
- Visual Assessment of Wind Farms: Best Practice, published by Scottish Natural Heritage and the University of Newcastle (2002).
- Heriot-Watt University, The Landscape Impact and Visual Design of Wind Farms.
- SNH. Siting and Designing Wind Farms in the Landscape, Version 1, December 2009.
- Use of Wind Energy in Aberdeenshire, Part 1, Guidance for Developers: Broad Areas of Search for Wind Farms. Supplementary Planning Guidance, Aberdeenshire Council, August 2005.
- Use of Wind Energy in Aberdeenshire, Part 2, Guidance for Assessing Wind Energy Developments. Supplementary Planning Guidance, Aberdeenshire Council, August 2005.
- The Renewable Energy Strategy. Aberdeenshire Council, December 2004.

3.2.2.2.3 Landscape Study Area

The extent of the landscape study area is to be agreed with Aberdeenshire Council and SNH. However, in accordance with SNH guidance it is anticipated that the LVIA will consider a set area of 35 km radius from the proposed turbine locations, in order to establish the spatial parameters of the assessment, and identify potential landscape and visual effects. Similarly, in accordance with SNH guidance CLVIA will consider other wind farm proposals (to be agreed) located within 60 km radius from the proposed turbines.

3.2.2.2.4 Computer Based Visibility Analysis - Zone of Theoretical Visibility

In order to identify landscape and visual resources within the landscape study area that may be theoretically affected by the proposed development, a series of Zone of Theoretical Visibility (ZTV) plans will be produced to illustrate the maximum theoretical area of visibility of the proposed wind farms and of agreed cumulative wind farms.

It should be noted that whilst ZTV's indicate theoretical visibility of the proposed development, the actual visual effects of the proposed development are assessed through a more detailed analysis of specific viewpoints via field survey observations and through the production and analysis of wireline and photomontage visualisations.

3.2.2.2.5 Computer Based Visibility Analysis - Visualisations

The assessment of potential visibility from selected viewpoints is typically aided by the use of visually representative material. To this end, a series of computer generated wireline images and photomontages will be produced for agreed viewpoint locations within the landscape study area, to illustrate both the likely impacts of the proposed development in its own right, and cumulatively.

It is anticipated that viewpoints within a 15km radius of the project area may be visualised by way of photomontage and wireline images; and that viewpoints beyond 15km will be visualised by wireline image only.

Based on a review of the preliminary ZTV (Figure 3) and an initial field survey, a preliminary list of key viewpoints has been identified for discussion with the LPA and SNH as follows:

Table 3.4 Preliminary viewpoint locations

VP Ref	Location	Easting	Northing	Justification
1	Aberchirder	62653	52364	Represents views from the closest settlement and Conservation Area
2	Residential Property NE	63505	52936	Represents views from the closest residential property with direct views towards the site

VP Ref	Location	Easting	Northing	Justification
	of Aberchirder			
3	Whitehills Conservation area	65799	65273	Represents views from a nearby settlement and Conservation area
4	Lower Deuchries	65461	55740	Represents views from residential properties adjacent to the site
5	B9025 towards Hill of Maunderlea	62737	57380	Represents views from road users approaching the site
6	Junction of A95 & A98	61859	62370	Represents views of road users from two key transport routes near the site
7	Banff	67578	63458	Represents views from nearby settlement and Aberdeenshire Area of Landscape Significance
8	Mains of Eden	69921	59124	Views representing the Aberdeenshire Area of Landscape Significance designation
9	Turriff	72319	50289	Represents views from nearby settlement and + Aberdeenshire Area of Landscape Significance
10	Logg Wood	64236	47414	Views representing panoramic viewpoint and Aberdeenshire Area of Landscape Significance
11	South Broomhill (A97)	60341	46849	Represents views for road users on main approach road towards site and Aberdeenshire Area of Landscape Significance
12	Turtory	59832	49523	Represents views from Moray AGLV and Aberdeenshire Area of Landscape significance
13	Knock Hill	53722	55173	Represents views from high point near site and local footpath
14	Little Balloch Hill	49336	50045	Represents views from high point near site and local footpath
15	Craigston Castle	75715	54503	Represents views from a nearby GDL

3.2.2.2.6 Landscape Assessment

Landscape assessment is based on an evaluation of the existing (baseline) conditions, the identification of existing landscape fabric and resources, and the assessment of their sensitivity and the magnitude of change associated with the introduction of the proposed scheme. The existing (baseline) landscape will be appraised from the national level, through to the regional level, to a more local scale commensurate to the study area, with reference made to published SNH landscape character assessments

and other data sources where appropriate. The description and classification of existing landscape character, analysis of intrinsic quality, and appreciation of value inform the assessment process. Having established the baseline, the sensitivity of the landscape will then be assessed. The sensitivity of the landscape in terms of its character is a function of landscape quality and value, landscape character sensitivity and visual sensitivity. Following this the predicted impacts will be evaluated and mitigation measures proposed in order to remove, or reduce the identified impacts.

3.2.2.2.7 Visual Assessment

Visual assessment involves an evaluation of the baseline visual context, the identification of visual receptors, and the assessment of their sensitivity and the magnitude of change associated with the introduction of the proposed scheme. The assessment commences with identification of the theoretical visibility associated with the proposed scheme, leading to identification of representative visual receptors, description of the existing visual context, and evaluation of the visual implications of implementation of the proposed scheme within the study area. Viewpoints will be identified and selected which represent a range of receptor types found within the study area, and will be representative of receptors located at differing distances, direction and elevations, and will be representative of both direct and oblique views and from locations where either full or partial views of the development may be afforded. Visual sensitivity considers the location and existing visual context of the receptor or viewpoint, the expectations and occupation or activity of the receptor, and the importance of the view.

The assessment of visual impact from any one location, takes into account the following:

- Sensitivity of the views and viewers (visual receptor) affected;
- Nature, scale or magnitude and duration of the change;
- Extent of the proposed development that will be visible;
- Degree of visual intrusion or obstruction that will occur;
- Distance of the view;
- Change in character or quality of the view compared to the existing.

3.2.2.2.8 Cumulative Landscape and Visual Effects

Cumulative landscape effects occur when a combination of one or more wind farm developments begin to influence the perception of landscape character. Cumulative visual effects occur in several ways, either arising when wind farm developments are

visible either in combination or succession from a particular viewpoint, or appearing sequentially as multiple developments when moving through the landscape. Cumulative effects can also develop through a gradual change in perception over time.

Assessment of the comparative effects of different wind farm combinations (i.e. those at different stages of the development process) is considered to provide for a better understanding of the likely cumulative effects of the proposed development on the receiving landscape and visual context. Operational wind farm developments are considered in the LVIA baseline. The CLVIA therefore considers the following scenarios.

- **Scenario 1** involves the assessment of the impacts arising due to the addition of the proposed development to an existing baseline comprising operational wind farm developments in conjunction with those granted planning consent i.e. under construction, or approved schemes, and assuming they are all constructed and operational;
- **Scenario 2** involves the assessment of the impacts arising due to the addition of the proposed development to a cumulative baseline comprising all schemes identified in Stage 1, in addition to submitted (but as yet undetermined) wind farm planning applications, and assuming they are all constructed and operational.

In consultation with Aberdeenshire Council and SNH, other wind farm developments considered within the cumulative study area will be agreed.

For each wind farm included within the assessment, cumulative ZTVs will be generated in order to determine the extent of the potential cumulative effects with Deuchries Wind Farm, and to identify/confirm cumulative viewpoints.

3.2.2.2.9 Sequential and Cumulative Sequential Visibility

Sequential visibility occurs when an observer moving through the landscape along a linear route (e.g. a road) experiences a series of repeated views containing the proposed development and /or other wind farms within the area.

The assessment of sequential visibility will describe the baseline conditions and describe the visual effects of the proposed development. Factors considered in the assessment of sequential effects include: the length of the route; the distance from the proposed development; direction of view; and the relationship to the ZTV coverage in terms of number of turbines visible; the extent of the proposed development visible; and the frequency and duration of available views encompassing the proposed development or cumulative developments along identified routes.

3.2.2.2.10 Magnitude of Change

The scale or magnitude of identified landscape, visual effects will be evaluated using defined criteria and will be rated on a six point scale from Very Large, Large, Medium, Small, Very Small, to Negligible.

3.2.2.2.11 Nature of Effects

The assessment will consider the nature of landscape and visual effects i.e. whether the change is direct or indirect, the duration of the effect i.e. short, medium, long term/permanent or temporary change, and whether the change is reversible or not.

3.2.2.2.12 Significance of Effects

The significance of all the landscape or visual effects (including cumulative and sequential) is determined by assessing the sensitivity against the magnitude of change. The assessment of significance of residual effects takes into consideration mitigation measures implemented as part of the development, and will state whether the significance of the change is beneficial or adverse.

3.2.3 Cultural Heritage and Archaeology

3.2.3.1 Initial Consultation

The proposed scope and methodology detailed below was devised following an initial telephone consultation with Aberdeenshire Council's archaeology service in January 2011.

3.2.3.2 Preliminary Environmental Baseline

Readily available archaeological data for the area around the Deuchries proposed windfarm reveals a diverse variety of non-scheduled archaeological sites and monuments, such as a ditched enclosure cropmark on Black Law, farmsteads, quarries, crofts and a smithy. The majority of the identified sites in the SMR have been identified from the First Edition Ordnance Survey (published 1857) and relate to post-medieval exploitation of the area.

A review of Roy's Military Survey Map of the Highlands (surveyed AD 1747-55) shows the area within the development boundary as consisting of arable fields surrounding scattered farmsteads. Discussions with the landowner and a brief site visit made in February 2011 indicated that the development area has been subject to agricultural improvement throughout the twentieth century, and many of the structures recorded on the site are abandoned.

Beyond the development boundary, a beaker and a cremation with a Food Vessel, suggesting Bronze Age activity in the area, have been recorded in the NMRS. No protected sites (e.g. Scheduled Ancient Monuments or Listed Buildings) have been identified within the development footprint. The nearest statutorily-protected sites are Listed Buildings within Aberchirder, and the Aberchirder Conservation Area. These lie within the zone of theoretical visibility (ZTV) of the development (see Figure 3). The location of key protected archaeological sites is shown in Figure 2.

3.2.3.3 Potential Impacts

The potential impacts are summarised below:

- Construction impacts (direct or indirect) on features of archaeological interest;
- Construction impacts upon previously unrecorded archaeological sites or features; and
- Operational impacts (primarily indirect) on the settings of protected heritage sites (principally SAMs, Historic Gardens/Designed Landscapes (HGDLs), Conservation Areas and Listed Buildings).

3.2.3.4 Method of Assessment

To consider direct impacts, data will be gathered for a Study Area of the footprint of the proposed Deuchries windfarm, including access roads and the grid connection route and an approximate 1km buffer from the site boundary line.

Data will be gathered from the following sources:

- The Aberdeenshire Council Sites and Monuments Record (SMR); consulted for lists of known archaeological sites and monuments and previous archaeological interventions;
- Historic Scotland's databases of Listed Buildings, Scheduled Ancient Monuments, Historic Gardens and Designed Landscapes and monuments proposed for scheduling;
- The National Monuments Record of Scotland (NMRS) and Historic Landscape Characterisation Areas;
- Vertical stereo aerial photographic coverage held by RCAHMS and Aberdeenshire Council;
- Ordnance Survey map coverage from 1850 onwards, and any other readily available early cartographic sources held at the National Library of Scotland Map Library;

- Bibliographic references and early parish accounts; and
- The Aberdeenshire Council Archives

To consider indirect impacts, data will be gathered for up to a 10km radius from the boundary of the proposed windfarm (depending on the Zone of Theoretical Visibility, as determined by the Landscape and Visual Assessment) to allow for an assessment of impact on the setting of statutorily-protected sites.

Data will be gathered from the following sources:

- Historic Scotland's databases of Listed Buildings, Scheduled Ancient Monuments, Historic Gardens and Designed Landscapes and monuments proposed for scheduling; and
- Aberdeenshire Council's list of Conservation Areas.

Historic Scotland's ongoing development of an Inventory of Historic Battlefields will also be monitored.

An archaeological walkover survey will be undertaken for the area of the proposed wind farm array and access tracks to consider the condition of the identified archaeological sites, to determine the potential for any previously unrecorded archaeological sites (including the potential identification of archaeological sites) and to comment on past and present land use and field boundaries.

In conjunction with the Landscape and Visual Assessment, cultural heritage receptors within the ZTV will be identified and visited to assess any potential indirect impacts.

Cumulative assessment of the impact on cultural heritage receptors will also be undertaken.

3.2.4 Ecology & Ornithology

3.2.4.1 Initial Consultation(s)

No initial consultation has taken place at time of writing other than a request for data from the local records centre: North East Scotland Biological Records Centre (NESBReC).

For the purposes of the Ecological Impact Assessment, the ecological assessment will include review of any relevant existing ecological information for the development area and immediate surrounds; information is readily obtainable, and in some cases has already been obtained.

Scottish Natural Heritage (SNH) has produced guidance on the siting of new wind farm developments in the form of Policy Statement 02/02.[1] Due to the scale of the plans provided within the policy it is not possible to accurately describe the spatial relationship between the site and sensitivity bands. However, it can be seen that the project area lies in Zone 1 (lowest) of the Natural Heritage Sensitivity Maps developed by SNH.

3.2.4.2 Preliminary Environmental Baseline

Designated sites.

Good EIA practice includes identification of any statutorily and non-statutorily designated sites of nature conservation interest within a minimum of 2km of the boundaries of a proposed development, though this may be extended if impacts could potentially extend over a wider area (IEA 1995[2]).

There are no statutory designated sites within 2km of the site. The nearest statutorily protected site lies c.6km to the north west of the site at Reidside Moss (Site of Special Scientific Interest (SSSI)). Reidside Moss is designated due to the presence of active raised bogs and degraded raised bogs still capable of natural regeneration. A second statutorily site lies c8km southwest of the site at Moss of Crombie (SSSI), a blanket bog designated for its lichen-rich peat land vegetation. The Cairngorms National Park lies c40 km to the southwest of the site.

There are no non-statutory designated wildlife sites within the proposed wind farm boundary or within the immediate vicinity. The proposed site does, however, contain a number of areas that are identified in the Grampian Region Natural Habitat Survey and the Inventory of raised bogs in Great Britain (Scotland). Further Information on non-statutory sites has been requested from NESBReC.

Protected Species

The National Biodiversity Network (NBN) gateway has been interrogated to identify which species had been recorded within the area around the proposed Deuchries Wind Farm. This confirmed records of the presence of badger (*Meles meles*), otter (*Lutra lutra*), red squirrel (*Sciurus vulgaris*), water vole (*Arvicola amphibius*) and bat species (*Pipistrellus species*) in the wider area.

The only badger sighting recorded in the wider area is from 1973 in the Forest of Deer. Red squirrel sightings have been recorded from the 1990s through to 2006 (Cleanhill

[1] Policy Statement 02/02 Strategic Locational Guidance for Onshore Wind Farms in Respect of the Natural Heritage (Updated May 2005)

[2] Institute of Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment. E & FN Spon. London.

Wood and Forglen Estate). Otters have been recorded from the 70s, 80s, and 90s in the wider area (Scotston Burn, Brydock Burn, Auchintoul Burn, Rosy Burn and River Deveron). There are two records of water vole in the wider area, recorded in 2002 (sites unknown).

Bats have been recorded from the 1970s through to 2007 in the wider area. Scottish Natural Heritage have provided records of *Pipistrellus species* but it is likely that other species have been sighted and recorded generally as *Chiroptera.*

The NBN Gateway includes no records of Great Crested Newt (*Triturus cristatus*) within the general area of the proposed development. There is one record of adder *(Vipera birus)* recorded pre-1990 within the wider area.

Field Surveys 2010/11

Bird surveys have been carried out at the site but wider ecology surveys have yet to be carried out.

A programme of breeding bird surveys between April and August comprising Vantage Point surveys and a territory mapping survey has been carried out, in accordance with the relevant SNH standards. The breeding bird community comprises a typical suite of farmland species including skylark, meadow pipit and yellowhammer. Notable species included wheatear, grasshopper warbler and reed bunting. A pair of buzzards also nested on site. Target species flight activity was limited with only two flights of greylag in April (two and four birds) and two flights of golden plover (11 birds in April, 78 in May).

Surveys have also been carried out during the autumn and winter (September to March) comprising VP surveys and a monthly walkover survey of the site and surrounding area, in accordance with SNH standards. Most notable results of these have been regular activity by geese: pink-footed and greylag. This has been concentrated in the second half of the winter and includes relatively small numbers of flights over the site but also foraging in fields on and surrounding the site (max foraging flock size of 2000+ birds). Up to 53 whooper swans have also been recorded foraging/loafing on site and 170 off site (although only two flights of this species have been recorded of four and nine birds). Activity by other species has been limited comprising two peregrine flights during VPs and another during walkover surveys. Note that at the time of writing, data from March is still to be collated.

3.2.4.3 Potential Impacts

The key issues relating to nature conservation interests and wind farms are as follows:

- The effects of direct habitat loss/damage due to land take by wind turbine bases, tracks and ancillary structures;
- The effects of indirect habitat loss/damage, e.g. the displacement of birds or protected species from the proximity of the wind turbines. Such disturbance may occur as a consequence of construction work, or due to the presence of the wind farm close to breeding, sheltering/roosting or feeding sites or on habitual flight routes;
- The effects of collision with rotating turbine blades, overhead wires, guy lines and fencing (i.e. killing or injury of birds or bats), which is generally considered to be of particular relevance (in respect of birds) for sites located in areas known to support raptors or large concentrations of waterfowl.

3.2.4.4 Method of Assessment

In assessing the effects of any development on ecology and nature conservation interests it is necessary to define the areas of land cover and the species and habitats that need to be considered in the EIA. In doing this, two inter-related factors need to be considered:

- A development can affect habitats and species directly (e.g. the land-take required) and indirectly (e.g. disturbance), with the impacts potentially extending beyond the development site boundaries;
- It is impractical for an ecological assessment to consider every individual species and habitat that may potentially be affected, rather it should focus on 'valued ecological receptors', i.e. species and habitats that are valued in some way (e.g. designated sites, species protected by specific legislation or species which have economic value) and which could potentially be affected by the proposed development.

It is against this background that the scope of this assessment will be defined through further desk study and an extended Phase 1 habitat survey following standard methodology (JNCC, 1993). This extended Phase 1 survey will determine the need for any additional survey work (such as otter, badger, water vole surveys) that may be required. In the context of the concern regarding bats and wind farms, a scheme of bat surveys will also be carried out (currently anticipated to be 4 visits between May and September).

The assessment will take account of the requirements of, and/or advice given in the following:

- Directive 2009/147/EC on the conservation of wild birds (the Birds Directive);
- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive);
- The Conservation (Natural Habitats, &c) Regulations 1994 (as amended);
- Wildlife and Countryside Act 1981 (as amended);
- The Nature Conservation Scotland Act (2004);
- The Surface Waters (Fishlife) (Classification) (Scotland) Regulations 1997 (as amended);
- The Protection of Badgers Act 1992;
- Scottish Planning Policy (SPP): Subject Policy, Landscape and Natural Heritage;
- Planning Advice Note (PAN) 60: Planning for Natural Heritage;
- PAN Onshore Wind Turbines (web based). Paragraphs on pages 5 and 6 of this PAN refer to impacts on Wildlife and Habitat, Ecosystems and Biodiversity.
- Nature Conservation: Implementation in Scotland of the Habitats and Birds Directives: Scottish Executive Circular 6/1995 as amended (June 2000);
- Scottish Executive Guidance on Protected Species (SE, 20013);
- Institute of Ecology and Environmental Management (IEEM 2006) Guidelines for Ecological Impact Assessment in the United Kingdom
- Survey methods for use in assessment of the impact of proposed onshore windfarms on bird communities (SNH 2005 – Revised 2010);
- Assessing significance of impacts from onshore windfarms on birds outwith designated areas (SNH 2006);
- Developing field and analytical methods to assess avian collision risk at wind farms (Band et al 2007);
- Natural England Technical Information Note TIN051 - Bats and onshore wind turbines. Interim guidance. First edition 11 February 2009;
- The UK Biodiversity Action Plan (UKBAP);
- The Scottish Biodiversity List; and

[3] European Protected Species, Development Sites and the Planning System: Interim guidance for local authorities on licensing arrangements. Scottish Executive 2001.

- North East Scotland Local Biodiversity Action Plan (LBAP).

Taking account of the impacts predicted with respect to the hydrological environment (see below), the potential effects upon fish will also be assessed. It is not proposed, however, that field surveys will be undertaken to support that assessment.

3.2.5 Hydrology and Hydrogeology

3.2.5.1 Preliminary Environmental Baseline

The main watercourses within or adjacent to the project area are detailed in Table 3. below.

Table 3.5 Main Watercourses

Main Watercourses on Site
Rivers and Burns
Rosy Burn
Burn of Arkland
Cunning Burn

The majority of the project area in the immediate surrounds of the proposed locations for the turbines drains into Rosy Burn, Cunning Burn and the Burn of Arkland, all tributaries of the River Deveron.

There is a small water body in the north of the site, c500m northwest of the northern most proposed turbine location. A second water body lies just outside the project area at Sweerburn, situated within a mixed woodland.

It is possible that there may be private water supplies and surface and groundwater abstractions within or close to the project area and if so these will also be considered during the assessment. However, this site is unlikely to be substantially sensitive in terms of its physical environment attributes.

3.2.5.2 Potential Impacts

The potential impacts are summarised below:

- Hydrological change, including possible disturbance and modification of watercourses, existing drainage patterns, and groundwater recharge and flows;
- Sediment or chemical pollution of watercourses;
- Interruption or disturbance of public or private water supplies; and

- Effects on freshwater ecology due to pollution, obstruction of watercourses or changes in hydrological regime.

Demonstrating that the wind farm will have a minimal impact on designated areas, on the public water supply and any private water supplies will be a key aim for the EIA.

3.2.5.3 Method of Assessment

A comprehensive desktop information gathering exercise will be carried out followed by site surveys, in order to verify the following information:

- Surface hydrology including definition of catchments and low and high flows;
- Site drainage patterns;
- Location of springs and flushes;
- Details of local aquifers and groundwater;
- Location and nature of water abstractions including public and private water supplies;
- Existing water quality monitoring on site and downstream of the development;
- Freshwater fisheries on site and downstream of the development;
- Site geological conditions;
- Soil associations and distribution on site, including identification of any areas of peat; and
- Identification of areas vulnerable to erosion or sediment deposition.

The information will establish the environmental baseline and will be used to inform the development of the layout. Following establishment of baseline conditions, an assessment of the potential effects associated with construction, operation and decommissioning of the proposal will be carried out. This will follow the established source-pathway-receptor approach.

The following legislation and national policy and guidance will be taken into consideration and will inform the basis of assessment:

- *The Water Framework Directive* (2000/60/EC);
- *The Water Environment and Water Services (Scotland) Act 2003*;
- *The Water Environment (Controlled Activities) (Scotland) Regulations 2005*;
- *SPP7 Planning and Flooding*; and

- *PAN 61 Planning and Sustainable Urban Drainage Systems*.

Relevant SEPA Pollution Prevention Guidelines and polices will also be considered during the assessment.

3.2.6 Noise

3.2.6.1 Preliminary Environmental Baseline

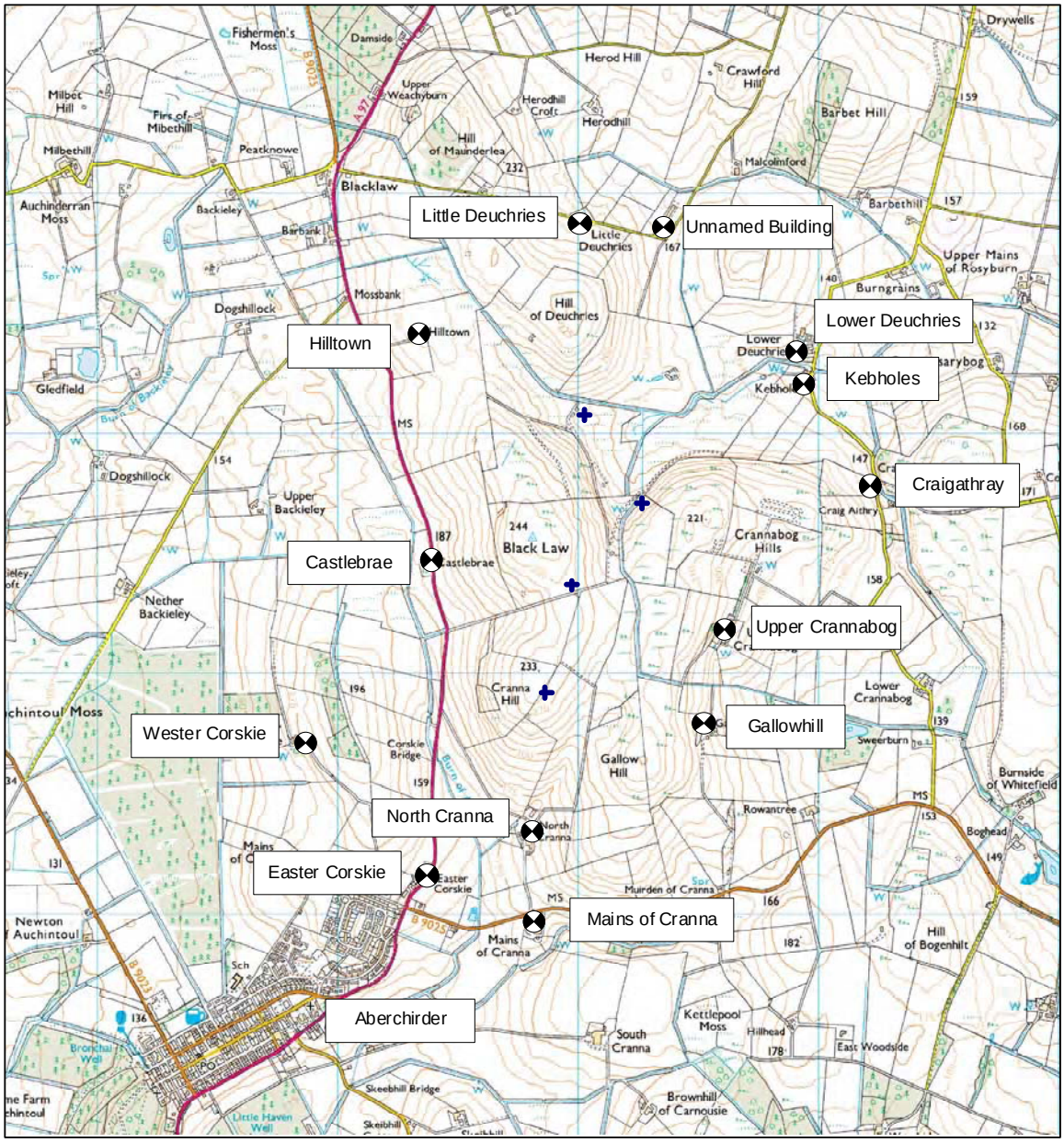
The nearest village is Aberchirder (NX 627 526) located to the extreme south west of the project area, approximately 1.2 km to the south west of the nearest proposed turbine location. The closest town is Turriff, situated approximately 7km to the southeast and therefore not considered close enough to be affected by the development.

In addition to Aberchirder, the nearest potential noise receptors to the proposed turbine locations include the following:

- Upper Crannabog (NJ 646 541), approximately 0.5km east
- North Cranna (NJ 638 533), approximately 0.5km south
- Castlebrae (NJ 633 544), approximately 0.7km northwest
- Gallow Hill (NJ 647 533), approximately 0.7km east
- Wester Corskie (NJ 628 537), approximately 0.7km west
- Hilltown (NJ 633 544), approximately 0.7km northwest
- Little Deuchries (NJ 640 559), approximately 0.9km north
- Unnamed Property (NJ 644 559), approximately 0.9km north
- Kebholes (NJ 650 552), approximately 0.9km east
- Craigathray (NJ 652 547), approximately 0.9km east
- Easter Corskie (NJ 633 531), approximately 0.9km southwest.
- Lower Deuchries (NJ 649 554), approximately 1km northeast
- Mains of Cranna (NJ 639 539), approximately 1km south

The location of these potential noise sensitive receptors, relative to the initial wind farm design is presented in Figure 7.

Figure 7 Potential Noise Sensitive Receptor Locations



3.2.6.2 *Potential Impacts*

The potential impacts on sensitive receptors are summarised below:

- Construction traffic noise (primarily along the local road network) and construction plant noise from site; and
- Operational noise from turbines and substations.

3.2.6.3 *Method of Assessment*

Noise impacts resulting from construction operations on site will be predicted in accordance with ISO91613-2:1996 "*Acoustics – Attenuation of sound during propagation outdoors*". The significance of noise impacts will be established with reference to criteria within BS 5228-1:2009 "*Code of practice for noise and vibration control on construction and open Sites- Part 1: Noise*".

It is not considered that temporary traffic for the construction of the wind turbines would be of a quantity high enough to result in significant noise impacts using criteria within BS 5228-1.

If required, a substation noise impact assessment will be undertaken in accordance with BS4142 1997 'Method for rating industrial noise affecting mixed residential and industrial areas'. However, at this stage it is assumed likely that any substation will be situated at distances from any noise sensitive receptor and that the effect of noise would not be considered significant (considered to be substation noise levels higher the background noise level at noise sensitive receptors).

Noise impacts resulting from the operation of the wind turbines will be undertaken in line with ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms'. Consultations will also be held with the Environmental Health Department of Aberdeenshire Council. The assessment would include the following:

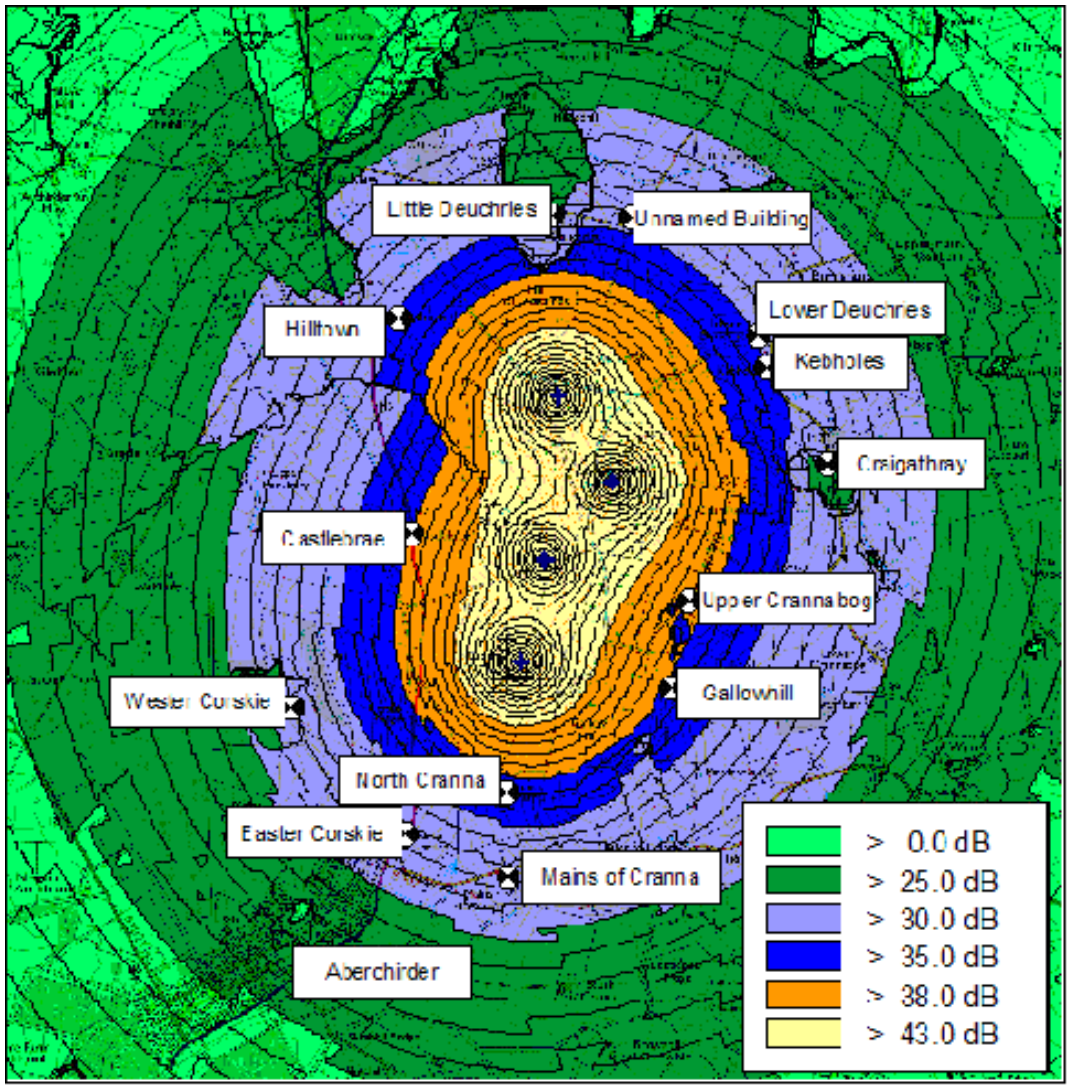
- A site visit to verify the list of potentially sensitive receptors identified above and identify any further receptors that may be in evidence;
- If required, a noise monitoring survey at relevant receptors where the initial desk study indicates monitoring is required and after consultation with the Environmental Health Officer (EHO);
- Prediction of the noise levels that will be experienced at each receptor; and
- Assessment of the significance of impact in accordance with the guidance given in ETSU–R-97.

For the purposes of this development, an initial desk study has been undertaken using REPower MM82 Evolution wind turbine data to predict resulting noise levels in the surrounding area and thereby identify properties which may be susceptible to significant noise impact and which will therefore form the focus of the assessment. The highest sound power level data at any specific wind speed for the turbine type has been used within the model. The predictions have used CadnaA noise modelling software with parameters set in accordance with the method outlined in the 'Agreement about relevant factors for noise assessment from wind energy projects' (Acoustics Bulletin Volume 34, No 2 March / April 2009). The resulting noise levels are presented in Figure 8. The noise contour colours represent, or relate, to different ETSU-R-97 minimum criteria:

- Yellow > 43 dB(A): above the night-time ETSU-R-97 minimum criteria;
- Orange >38 dB(A): above the night-time ETSU-R-97 minimum criteria assuming a 5 dB tonal penalty;
- Dark blue >35 dB(A): above the daytime ETSU-R-97 minimum criteria;
- Light blue >30 dB(A): above the daytime ETSU-R-97 minimum criteria assuming a 5 dB tonal penalty;
- Green <30 dB(A): within ETSU-R-97 daytime minimum criteria (even with tonal penalty).

The tonal audibility of the current measured test data used for the REPower MM82 evolution turbine indicates that a tonal penalty ***would not*** be required.

Figure 8 Predicted Wind Turbine Noise Levels



The results show that, of those potential noise receptors listed within 1km of the site, four existing noise sensitive receptors would experience noise levels from the proposed development in excess of the ETSU-R-97 minimum noise criteria, using the daytime minimum without tonal penalty (Hilltown and Kebholes are considered on the minimum boundary at 35.4 dB(A) and 35.2 dB(A) respectively) based on the 6 turbines proposed in the initial site layout. Based on the current arrangement of wind turbines for the Deuchries wind farm proposal, it is proposed that a noise survey be undertaken in accordance with ETSU-R-97 at locations representing the following noise sensitive receptors:

- Upper Crannabog (also representing Galloway). Upper Crannabog is property of the landowner;

- North Cranna. North Cranna is property of the landowner; and
- Castlebrae.

3.2.7 Traffic and Transportation

3.2.7.1 Preliminary Environmental Baseline

The construction and operation of a wind farm development will require the transport of large components and plant items that are used to build the infrastructure and to erect the turbines. Quantities of building materials including aggregate and concrete also need to be transported unless sources are batched on site.

The project area can currently be accessed by taking the B9025 from the A97 just north of Aberchirder. During the construction and operation of the windfarm, an alternative access route will be used. This route is yet to be determined but is likely to lead off the B9025 running north into the site. Existing farm roads will be used where possible but is likely that other access tracks will be required to accommodate large vehicles.

Turbine components will be transported by road, approaching the area from the A97.

3.2.7.2 Potential Impacts

It is not expected that there will be any significant impacts resulting from operational traffic; the potential impacts are anticipated to be construction traffic impacts upon existing traffic flows along the A97.

Further issues that will require consideration are:

- Disruption to existing traffic flows on the local road network during construction,
- Accessibility from the port to the development site.

3.2.7.3 Method of Assessment

Impacts are likely to be limited to the construction phase of the development specifically the delivery of plant machinery and materials. These will be assessed in two ways, as discussed below.

Vehicle Accessibility

The main concern with respect to vehicle accessibility is the delivery of plant, materials and machinery during construction, although account would be taken of the need to replace major components during operation.

To this end, a detailed study maybe carried out in terms of assessing the most appropriate mode of transport for moving components, machinery and materials to the

site and the capacity of the road network to accommodate such transport. In particular, the study will focus on the requirements for abnormal loads. The most onerous elements to transport are the turbine components. These often form abnormally long or heavy loads. The routes chosen for turbine components will be assessed through swept path analyses via computer modelling informed by site survey. Any enabling works that are required will be agreed with the local authorities and the impact and level of the works assessed. Where any enabling works are required these will be identified and assessed.

The local routes from the highway network to the turbine positions will be closely examined to minimise the impact on sensitive features. Off the main highway network, existing tracks and roads will be used where possible with modifications recommended where required to accommodate the swept path of the blade transporters.

Traffic Disruption

It is the nature of wind farms that, during their operational lifespan, they create so few vehicular movements as to have little perceivable impact. The operational phase of the wind farm will not therefore be considered in terms of traffic disruption as part of the EIA.

In comparison, the volume of construction traffic will be significantly higher than that associated with operational requirements and therefore the assessment of impacts will focus on the construction element of the proposed development only. The assessment will discuss the types of machinery, materials and components requiring transportation including:

- Turbine components
- Turbine electrical equipment;
- Turbine foundations and crane hard-standings;
- Access tracks, compounds and substation compound aggregates;
- Removal of spoil generated during access track construction;
- Other traffic such as excavators, site huts, fencing; and
- Construction worker vehicles.

The assessment will also identify the types of vehicle needed to transport such loads and potential transportation routes.

The volume of all construction traffic movements will then be quantified along with the projected schedule of movements. This will then be used to determine daily vehicle numbers and the delivery profile.

These volumes will then be assigned to the local highway network in accordance with best estimates for distribution based upon advice from turbine manufacturers, contractors and haulage firms familiar with turbine installation and transport.

Vehicle volumes and times will then be assessed against existing baseline traffic levels, the data for which will be obtained from the Aberdeenshire Roads and Transportation Department and/or Transport Scotland. This will be used to determine the impact of the traffic associated with wind farm construction in terms of increases in traffic flows on the local road network.

3.2.8 Socio-economic, Land Use and Tourism

3.2.8.1 Preliminary Environmental Baseline

The site falls within Council Ward 1: Banff and District. Settlements in the vicinity of the site include the village of Aberchirder (population 1,149) to the southwest of the project area. The nearest large conurbation is Turriff (population 5,708), located 7km to the southeast with Banff (population 3,991) located 10km to the northeast.[4]

The Banff and District ward employs people primarily in health and social work (14.4%), manufacturing (14%), agriculture, hunting and forestry (13%) and wholesale and resale trade and repairs (13.1 %).[5]

3.2.8.2 Potential Impacts

The potential impacts are summarised below:

- Disruption due to construction, e.g. noise nuisance, traffic disruption and visual impacts;
- Operational impacts upon tourism and recreation; and
- Direct and indirect economic benefits resulting from employment and other contributions.

3.2.8.3 Method of Assessment

An assessment will be carried out taking account of the following:

[4] Information from Scottish census data: http://www.scrol.gov.uk

[5] Aberdeenshire Council, 2011. Accessed at: http://www.aberdeenshire.gov.uk/

- Socio-economic effects of the proposals, primarily related to job creation;
- Proximity of the project area to areas of recreational use, public rights of way, and footpaths; and
- Proximity of the project area to areas of interest for tourism.

The impacts will be predicted with reference to published research where relevant, via consultations with relevant authorities and bodies, and through reference to other technical assessments relevant to the proposed development, e.g. landscape and visual assessment and archaeological assessment.

3.2.9 Electromagnetic Interference (EMI), Shadow Flicker and Aviation

3.2.9.1 Preliminary Environmental Baseline

Consultation with Ofcom initially suggests that there will be no telecommunication link directly affected by the proposed wind farm. A full response from Ofcom will, however, be required to confirm this.

Shadow flicker may occur under certain combinations of geographical position and time of day, when the sun passes behind the rotor of a wind turbine and casts a shadow over neighbouring properties. As the blades rotate, the shadow flicks on and off, an effect known as shadow flicker. All the settlements discussed in *Section 3.2.7* will all be considered in terms of sensitivity to shadow flicker.

The proposed wind farm site is within the vicinity of Aberdeen Airport (Perwinnes) Primary Radar. Consequentially, there is a possibility of radar interference. A radar survey for the site was undertaken in 2004. This showed that turbines up to 100m in height would have no impact on radar infrastructure in the area. The proposal at present includes for the possibility of turbines up to 110m in height and consultation with Aberdeen airport will be undertaken to establish the likelihood of impact of turbines of this height on its infrastructure. There has been no response to consultation from Civil Aviation Authority (CAA). The MoD has confirmed it would not object to the proposal for 4 turbines at 110m in height.

3.2.9.2 Potential Impacts

If inappropriately sited, wind turbines have the potential to:

- Interfere with telecommunications; and
- Interfere with aviation communication systems (primarily radar communication).

3.2.9.3 Method of Assessment

Extensive consultations with television, radio and mobile phone operators will be carried out to inform the design of the development and assess the potential impacts upon telecommunications.

Appropriate consultation will be undertaken with the CAA, the MoD and National Air Traffic Services (NATS) in order to ensure the proposed development does not interfere with military or civil aviation communications systems.

Shadow flicker will be assessed for the project area defined from the tower heights, rotor diameters and geographical location of each turbine for the proposed Deuchries Wind Farm development. In keeping with relevant guidance, houses outside of 10 rotor diameters will be omitted from the assessment. Assessment will be undertaken using WindPRO and Geographical Information Systems (GIS) software.

3.2.10 Environmental Aspects Scoped Out

At this stage, it is proposed not to assess the proposed Deuchries Wind Farm development's impact on air quality as part of the EIA process. It is predicted that the impact of emissions (e.g. from plant, vehicles and machinery) during the construction, operation and decommissioning of the development will not be significant, and the project area lies within a rural area of generally good air quality does not lie within an Air Quality Management Area (AQMA).[6]

Readily accessible information sources indicate that no areas of peat are recorded within the proposed development area.[7] Therefore, it is proposed to scope out peat hazard assessment and peat slide risk assessment as part of the EIA process.

[6] Information from the Air Quality in Scotland website: http://www.scottishairquality.co.uk/laqm.php interrogated on 7/10/2010.

[7] Information accessed from the British Geological Survey: http://www.bgs.ac.uk/GeoIndex/ interrogated on 5/4/2011

4 CONSULTATION RESPONSES

We welcome your views and opinions on the proposed project and the scoping exercise. Informal contact is encouraged. If you wish to discuss matters contained in this report in greater detail prior to responding to the scoping exercise, please contact RSK at:

Michael Kelly

Associate Director

RSK Environment Ltd

65 Sussex St

Glasgow

G41 1DX

Tel: 0141 418 0471

Fax: 0141 429 4566

Email: mkelly@rsk.co.uk

APPENDIX 1: FIGURES

Figure 1 Site Location and boundary

Figure 2 Environmental Designations

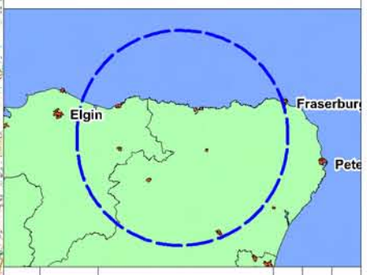
Figure 3 Landscape Character Types

Figure 4 Zone of Theoretical Visibility to hub

Figure 5 Zone of Theoretical Visibility to tip

Figure 6 Cumulative windfarms

Proposed Site Location



Rev	Date	Description	Drn	Chk	App
00	07.04.11	Site Location	BF	MK	MK

FORCE 9 ENERGY

Deuchries Wind Farm

RSK GROUP PLC

Figure 1: Site Location and Boundary

SCALE: 1:150,000 @ A3, Insert 1:1 000 000

FILE NAME: P:\ENVIRONMENT\1190000 - EIA Glasgow\P190283 Deuchries Wind Farm\08 GIS\Figure 1 - Site Location and Boundary.Wor

Turbine Location
Proposed Site Location
35km distance marker
Conservation Area
Historic Gardens & Designed Landscapes
Local Landscape Designations
Wildland
Category A Listed Buildings
Scheduled Ancient Monuments
RSPB Reserve
Country Park
National Park
Ancient and Semi Natural Ancient Woodland
Local Nature Reserve
National Nature Reserve
SPA
SAC
Ramsar
SSSI
Long Distance Paths
National Cycle Route

Rev	Date	Description	Drn	Chk	App
00	12.01.11	Constraints Plan	BF	MK	MK

FORCE 9 ENERGY

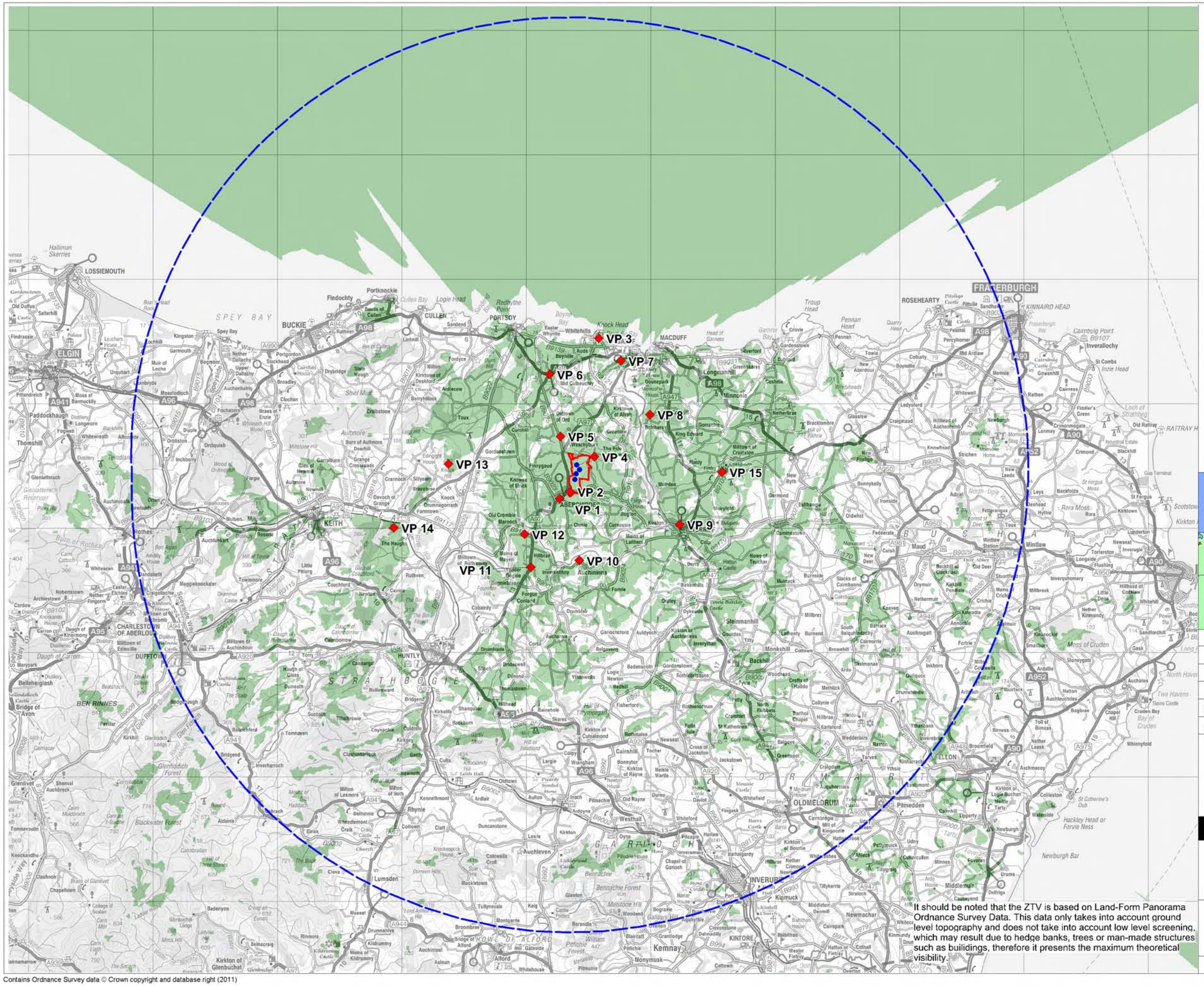
Deuchries Wind Farm

RSK GROUP PLC

Figure 2: Environmental Designations

SCALE: 1:300,000 @ A3

FILE NAME: P:\ENVIRONMENT\190000 - EIA Glasgow\P190283 Deuchries Wind Farm\08 GIS\Figure 2 - Environmental Designations Wor



Turbine Location
Proposed Site Location
35km distance marker
Proposed Viewpoint
Zone of Theoretical Visibility

VP1: Aberchirder Conservation Area
VP2: Property NE of Aberchirder
VP3: Whitehills
VP4: Lower Deuchries
VP5: B9025 towards Hill of Maunderlea
VP6: Junction of A95 & A98
VP7: Banff Conservation Area + GDL
VP8: Mains of Eden (Aberdeenshire Area of Landscape Significance)
VP9: Turriff (Aberdeenshire Area of Landscape Significance)
VP10: Logg Wood (Aberdeenshire Area of Landscape Significance)
VP11: South Broomhill (Aberdeenshire Area of Landscape Significance)
VP12: Turtory + AGLV
VP13: Knock Hill
VP14: Little Balloch Hill
VP15: Craigston Castle

Rev	Date	Description	Drn	Chk	App
00	07.04.11	Viewpoints	BF	MK	MK

FORCE 9 ENERGY

Deuchries Wind Farm

RSK GROUP PLC

It should be noted that the ZTV is based on Land-Form Panorama Ordnance Survey Data. This data only takes into account ground level topography and does not take into account low level screening, which may result due to hedge banks, trees or man-made structures such as buildings, therefore it presents the maximum theoretical visibility.

Figure 3: Preliminary Viewpoint Plan with Zone of Theoretical Visibility

SCALE: 1:300,000 @ A3

FILE NAME: P:\ENVIRONMENT\190000 - EIA Glasgow\P190283 Deuchries Wind Farm\08 GIS\Figure 3 - ViewpointsZTV Wor

Turbine Location
Proposed Site Location
35km distance marker
Proposed Viewpoint
Agricultural Heartland
Coastal
Coastal Farmland
Coastal Lowlands
Farmed Moorland Edge
Inland Loch
Loch Island
Moorland Plateau
River Valleys
Straths and Valleys
The Coast
Uplands
Uplands and Glens

VP 1
VP 2
VP 3
VP 4
VP 5
VP 6
VP 7
VP 8
VP 9
VP 10
VP 11
VP 12
VP 13
VP 14
VP 15

LOSSIEMOUTH
ELGIN
BUCKIE
FINDOCHTY
PORTKNOCKIE
CULLEN
PORTSOY
BANFF
MACDUFF
FRASERBURGH
ROSEHEARTY
KINNAIRD HEAD
ABERCHIRDER
KEITH
HUNTLY
DUFFTOWN
CHARLESTOWN OF ABERLOUR
OLDMELDRUM
INVERURIE
KINTORE
ELLON
Kemnay
Lumsden
SPEY BAY
BEN RINNES
STRATHBOGIE
GARIOCH
HOWE OF ALFORD

Rev	Date	Description	Drn	Chk	App
00	12.01.11	LCA Types	BF	MK	MK

FORCE 9 ENERGY

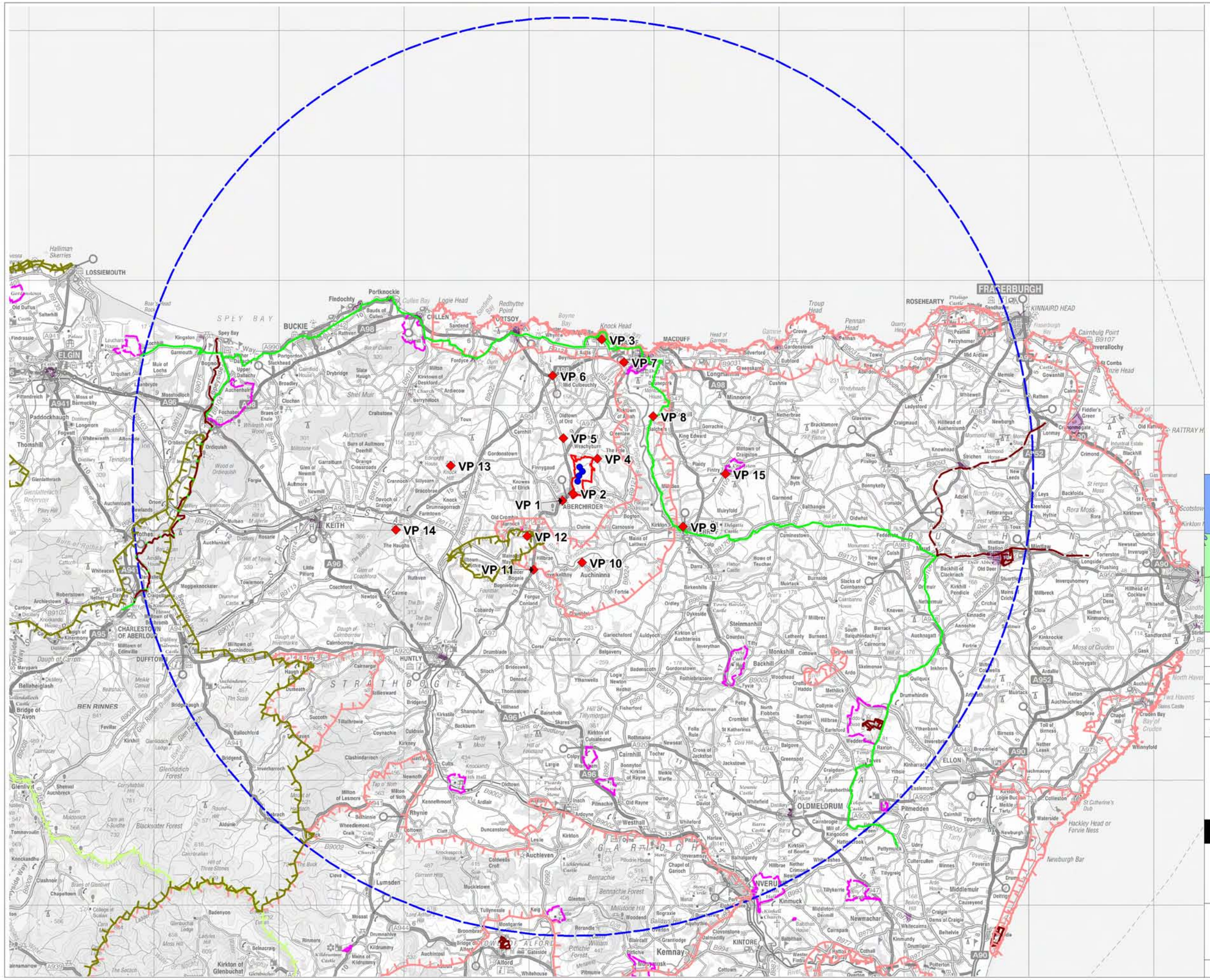
Deuchries Wind Farm

RSK GROUP PLC

Figure 4: Landscape Character Types

SCALE: 1:350,000 @ A3

FILE NAME: P:\ENVIRONMENT\1190000 - EIA Glasgow\P1902283 Deuchries Wind Farm\08 GIS\Figure 4 - Landscape Character Types Wor



- Turbine Location
- Proposed Site Location
- 35km distance marker
- Proposed Viewpoint
- Conservation Area
- Historic Gardens & Designed Landscapes
- AGLV
- Area of Landscape Significance
- Country Park
- National Park
- Long Distance Paths
- National Cycle Route

Rev	Date	Description	Drn	Chk	App
00	12.01.11	Constraints Plan	BF	MK	MK

FORCE 9 ENERGY

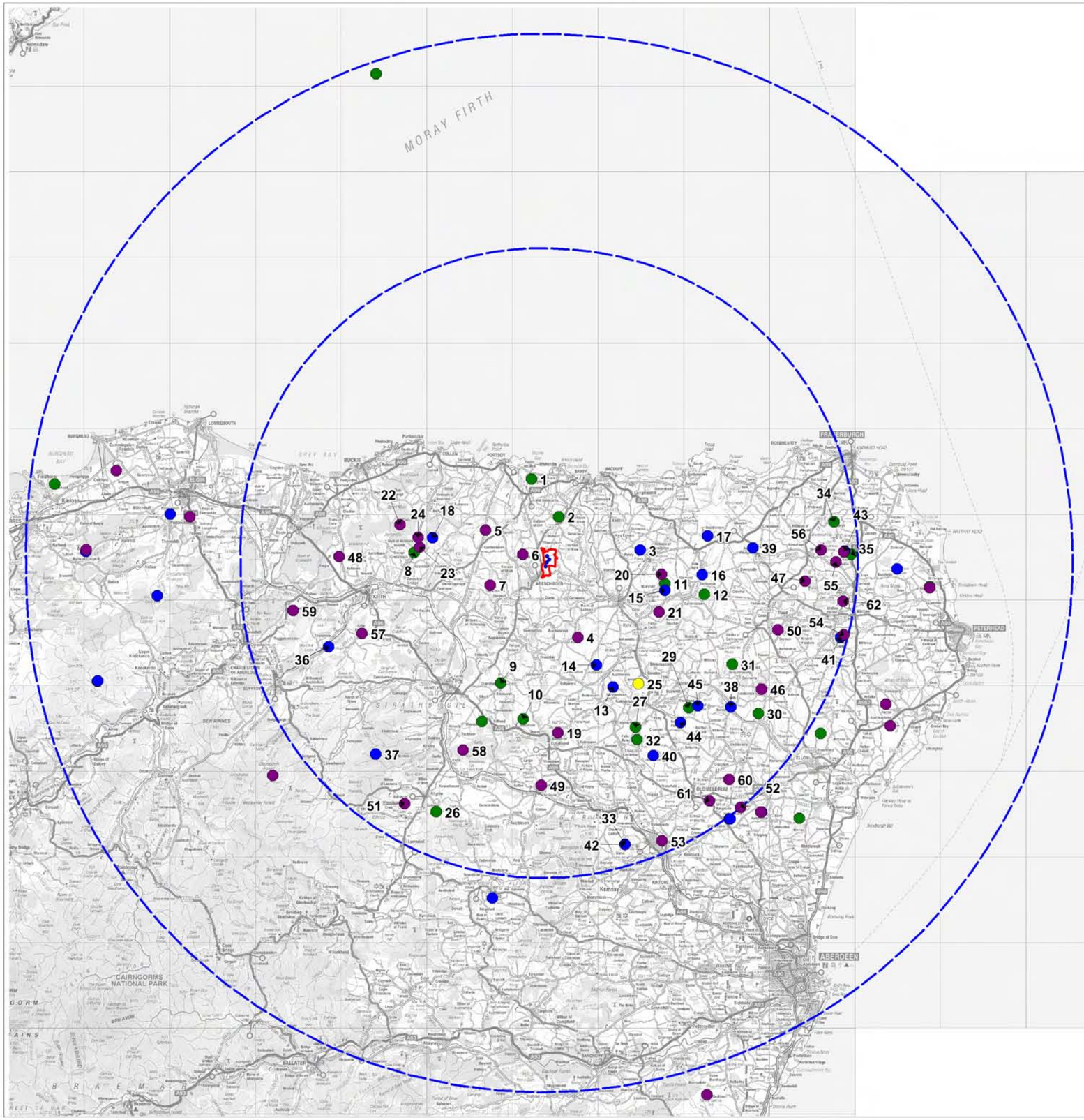
Deuchries Wind Farm

RSK GROUP PLC

Figure 5: Landscape Designations

SCALE: 1:300,000 @ A3

FILE NAME: P:\ENVIRONMENT\1900000 - EIA Glasgow\P1902\83 Deuchries Wind Farm\08 GIS\Figure 5 - Landscape Designations.Wor

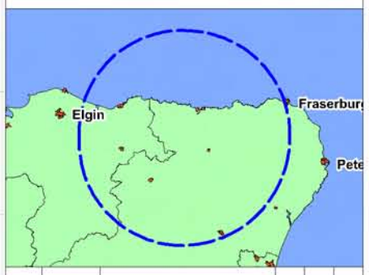


Contains Ordnance Survey data © Crown copyright and database right (2011)

Wind Farm Key

1 Boyndie Airfield and Extension
2 Strath of Brydock ext
3 Gairnieston Farm
4 Shielburn Farm
5 Muirake
6 Mains of Auchinderran Farm
7 Mossford Farm
8 Balnamoon Farm
9 Dummuie
10 Glens of Foudland
11 Cairnhill
12 Newstead
13 Gordonstown Hill
14 Mains of Hatton
15 Castle of Auchry
16 Bogenlea Farm
17 Little Byth
18 Myreton Crossroads
19 Tillymorgan
20 Cairnhill Ext
21 Burnside of Idoch
22 Aultmore Wind Farm
23 Myreton
24 Netherton of Windyhills
25 Camaloun
26 Cairnmore Farm
27 Hill of Burns
28 Hill of Eastertown
29 St John's Wells
30 Skelmonae
31 Hill of Balquhindachy (extension)
32 Cowhill
33 Newstead
34 House O Hill
35 North Redbog
36 Hill of Towie (formerly Drummuir)
37 Clashindarroch re-submission
38 Methlick Farmers Wind Energy Project
39 Greenhill Croft
40 Hill of Easterton Extension
41 West Knock Farm
42 Dalgarno Croft
43 West Cockmuir
44 Denhill
45 Haddo
46 Skelmonae Ext.
47 Bogenjohn Farm
48 Wester Buthill
49 Hill of Tillymorgan
50 Old Maud
51 Upper Wheedlemont Farm
52 Hill of Fechel
53 Cairncake
54 West Knock Farm
55 Autygills Farm
56 Clayfords farm
57 Edintore
58 Corskie
59 Ardoch Farm
60 Cairnbrogie
61 Mosseye
62 Toux

- Turbine Location
- Proposed Site Location
- 60km and 35km distance marker
- Operational
- Approved or Under Construction
- In Planning
- In Scoping



Rev	Date	Description	Drn	Chk	App
00	07.04.11	Cumulative Plan	BF	MK	MK

FORCE 9 ENERGY

Deuchries Wind Farm

RSK GROUP PLC

Figure 6: Cumulative Wind Farm Baseplan

SCALE: 1:500,000 @ A3

FILE NAME: T:\T190000 - RSK Scotland Glasgow\T190283 Deuchries Wind Farm\01 GIS\Figure 6 - Cumulative Developments Wor