Supplementary Guidance

Topic: Wind Turbine Development in Aberdeen City

March 2013

1 Introduction

The development of renewable energy technologies of all types and on all scales is supported by Aberdeen City Council and Local Development Plan Policy R8 - Renewable and Low Carbon Energy Developments. The Local Development Plan supports the principle of wind turbines in any location providing that there is no detrimental impact on: our built and natural heritage, air safety, tourism and recreation, residential properties or safety. Having a positive approach to renewable developments will help to meet the Scottish Government's target for 100% of Scotland's electricity to be generated from renewable sources by 2020. Renewable technologies are becoming more commonplace within Scotland, and the range of technologies available includes wind power, solar power, heat pumps and biomass boilers. The guidance in this document focuses solely on wind power renewable energy technologies. Many suitable sites will be located in the Green Belt. Two of the main purposes of the Green Belt are to protect and enhance the quality, character, landscape setting and identity of towns and cities, and protect and give access to open space within and around towns and cities. The guidance in this document will ensure that these aims are maintained.

The typical wind energy renewable generating technologies proposed in Aberdeen are likely to fall within the micro-renewable category. The term micro-renewable is used to describe a non-commercial renewable energy development, which provides heat and/or electricity to a single end user, be it a single dwelling house, office or community facility. Permitted development rights are in place for the installation, alteration or replacement of a free standing wind turbine within the curtilage of a dwelling. For further guidance on this please contact the Planning and Sustainable Development Department.

The guidance in this document covers all wind energy developments including domestic and non-domestic. The primary purpose is to clearly set out, for all involved in the planning process, the information and requirements that the Council will have to take into account when determining applications for wind energy developments. The level of detail required for each application will be dependent on what is proposed and it is important that discussions with the planning service are had at the earliest opportunity.

2 Information to be submitted with any planning application for wind turbine developments

In determining applications for one or more wind turbines Aberdeen City Council will expect each application to be submitted with supporting information to address the issues explained in the sections 2.1 to 2.12 listed below. Further information such as an Environmental Impact Assessment may be required. If more than two turbines are proposed, or if turbines are more than 15m in height, they are classed as Schedule 2 developments under the Environmental Assessment Regulations. It is then a matter for Aberdeen City Council to decide whether the turbines are likely to have significant environmental effects and therefore require an Environmental Impact Assessment, which will be determined by submitting a request for a screening

option. It is strongly recommended that applicants submit a request for a screening opinion before any such application is submitted to avoid delay in determining the subsequent application.

Aberdeen City Council is required to consult Aberdeen International Airport, NATS (air traffic control) and the Ministry of Defence on all applications for wind turbines. The Civil Aviation Authority will also be consulted in some circumstances. The links and email address below to will be useful if you are seeking further information.

MoD:
http://www.mod.uk/DefenceInternet/MicroSite/DIO/WhatWeDo/Operations/ModSafeguarding.htm
NATS: http://www.nats.co.uk/services/information/wind-farms/
CAA: http://www.caa.co.uk/windfarms
Aberdeen International Airport: _safeguarding@aiairport.com

2.1 Technical Information

The detail and specification of the proposed wind turbine(s) will need to be provided. The information submitted should be in a format that is clear for the planning service and the public to understand. Detail will need to be given on the:

- Type and number of turbine(s) proposed
- Rated generating capacity of the turbine(s)
- Materials and colour of the wind turbine components
- Foundation's material, depth and size
- Separation distances between turbines (if more than 1 turbine proposed)
- Ancillary equipment/structures (if proposed)
- Construction and operational access requirements, including details of access tracks, transmission cable routes and borrow pits
- Proposals for decommissioning
- Landscaping works proposed

2.2 Environmental Impact

The protection, preservation and enhancement of the environment are important aims of the Local Development Plan and the impacts of proposed turbines on wildlife, habitats, ecosystems and biodiversity will need to be considered carefully. Further detail on the environmental impact is contained in other supplementary guidance and technical advice listed below.

Supplementary Guidance: Archaeology and Planning
Supplementary Guidance: Bats and Development
Supplementary Guidance: Buffer Strips Adjacent to Water Bodies
Supplementary Guidance: Landscape Guidelines
Supplementary Guidance: Open Space
Supplementary Guidance: Trees and Woodlands
Technical Advice Note 7: Natural Heritage Guidance

NESBReC can provide more details on specific sites and can be contacted at: nesbrec@aberdeenshire.gov.uk

Natural Heritage

Poilcy NE8 – Natural Heritage sets out the policy requirements that apply to all development. The information required will depend on the scale and location of the turbine(s) and there may be a requirement for ecological assessments, Environmental Impact Assessment and a Habitats Regulation Appraisal. The map in Section 3 indicates the national and local designations that must be taken into account. The map includes Special Protection Areas, Special Areas of Conservation, Sites of Special Scientific Interest, Local Nature Reserves, Local Nature Conservation Sites. In addition to these consideration should be given to species identified in the local biodiversity action plans as it is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity, so in considering applications it is important to consider species identified in the local biodiversity action plans and ensure that there is no negative impact on them.

Any assessment should cover the following points and the report must clearly set out the methods used for data collection.

- Classify and evaluate the natural habitat and species that could be affected, some of which may be some distance from the proposal
- Assess the potential affect(s) on protected species including bats, birds and any other protected terrestrial species
- Classify and evaluate the agricultural context
- Outline any hydrological impacts
- Evaluate the impact of a wind turbine(s) on these
- Discuss the scope of mitigation on the possible and proposed impacts
- Habitats Regulations Appraisal will be required where there may be an impact on the River Dee Special Area of Conservation or Special Protection Areas located in Aberdeenshire, see Map 2 in Section 3

Assessing the impact of small scale wind energy proposals on the natural heritage provides further guidance on the impact and is available from SNH at: http://www.snh.gov.uk/docs/A669283.pdf

Woodland

There is a national presumption against the loss of woodland, which is supported by Policy NE5 – Trees and Woodlands. Where trees will be lost as a result of development compensatory planting will be required to mitigate loss. Proposals should comply with the Scottish Government's policy on the loss of woodland; see The Control of Woodland Removal (2009) for further detail.

Landscape and Visual Impact Assessment (LVIA)

LVIA is not only concerned with landscapes that are recognised as being special or valuable, but is also about the ordinary and the everyday – the landscapes where people live and work, or spend their leisure time and the impact that development has on people.

It also does not mean just special or designated landscapes and it does not only apply to the countryside. Landscape can mean a small patch of urban wasteland as much as a mountain range and an urban park as much as an expanse of lowland plain.

The need to give particular attention to the effects of landscape change arises from the importance that people attach to landscape - whether as individuals, enjoying landscapes through all the senses, as local communities or as national bodies.

The two components of LVIA are:

1. Landscape effects assessment: deals with changes to landscape as a resource. Society as a whole has an interest in this and it is recognised as one of the key dimensions of environmental interest, alongside matters such as biodiversity, or cultural heritage. It is concerned with issues like protected landscapes, the contribution of landscape character to sense of place and quality of life for all, and the way that change may affect individual components of the landscape.

2. Visual effects assessment: is concerned with how the surroundings of individuals or groups of people may be specifically affected by change in the landscape. This means assessing changes in specific views and in the general visual amenity experienced by particular people in particular places.

A cautious approach is necessary in relation to landscapes which are rare or highly valued. Aberdeen City Council's Technical Appendix on Landscape Characteristics is available on the Aberdeen City Council website from the link below:
(http://www.aberdeencity.gov.uk/nmsruntime/saveasdialog.asp?lID=31730&sID=14344).

The LVIA must consider the following:

- Character of the landscape, and outline if the proposed site is a ridge, hill, valley, coastal area and the vegetation present
- Landscape quality and value
- Impact of the wind turbine(s) on the landscape
- Visual impact on areas for recreation, including formal and informal paths
- Cumulative impact of the proposed application considering wind turbines that are already in existence or where planning permission has been approved. This will also include proposed and approved turbines located in Aberdeenshire
- Scope for mitigation of negative impacts
- Details of the location, visual impact and the restoration of borrow pits

Represented viewpoints of the proposal should cover both long and short range visibility and presentation by 'photomontage' or 'videomontage' is recommended. Individual circumstances will dictate the optimum position for wind turbines. This will be influenced by the size of the installation and its surrounding environment. The potential siting of wind turbines close to, on, or

integrated with buildings means special attention must be given to the need to protect amenity.

Geology and Geomorphology

Geodiversity is vital in preserving our landscapes and nature. Nigg Bay, Don Estuary, Rubislaw Quarry, Brimmond Hill and Elrick hill are all recognised for their geological importance. Turbine structures should be sited sympathetically with respect to local rocks and landforms, avoiding key features and it is important not to 'fragment' an area of interest by obscuring the line of site between individual rock outcrops or landform features.

Peat land and Wetlands

Peat land is an important habitat and acts as a carbon sink and the development of wind turbines on peat land will result in the loss of carbon. To ensure that the carbon balance savings of the scheme is maximised developments should be designed to minimise soil disturbance when building roads and tracks, turbine bases and other infrastructure.

Where the proposed infrastructure will impact on peat lands a detailed map of peat depths should be submitted. This should include details of the basic peat land characteristics. For areas where avoidance is impossible, details of how impacts on peat lands are minimised and mitigated should be provided as part of the planning application. This should consider the drainage, pollution and waste management implications and include preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, dewatering excavations, drainage channels, cable trenches or the storage and re-use of excavated peat. SEPA consider disposal of significant depths of peat as being landfilled waste. Where peat is to be excavated applicants must submit details of what use the peat will be put to.

If wetland systems are present any application should demonstrate how the layout and design of the proposal, including any associated borrow pits, hard standing and roads, avoids impacts on such areas. For areas where avoidance is impossible, details of how impacts upon wetlands and existing groundwater abstractions are minimised and mitigated should be provided as part of the planning application. As best practice a buffer distance of 100m between ground water dependent terrestrial ecosystems (particular type of wetland) or groundwater abstractions and roads, tracks and trenches, and a larger separation distance of 250m from borrow pits and foundations is required. These separation distances will ensure that these ecosystems are adequately protected and prevent habitat loss.

Windfarm developments can include elements which require engineering works in the water environment e.g. bridges or culverts for new or upgraded access tracks. Windfarm developments should be designed to avoid the need for new watercourse crossings, and where such works are necessary then the following information should be submitted:

- A site survey of existing water features
- Map showing the location of all proposed engineering activities

- Systematic table detailing the justification for each activity along with proposed mitigation
- An indication of the proposed design (e.g. bridge, bottomless culvert, arched culvert)
- Photo of each affected waterbody including its dimensions design
- Where flooding may be an issue a flood risk assessment may also be required.

Pollution

Major developments should incorporate pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. Discussions with SEPA should be had to detail the requirements. Any Environmental Statement should deal with pollution prevention: the specific issues that we expect to be addressed are available on the Pollution Prevention and Environmental Management section of the SEPA website.

Borrow Pits

Borrow pits can be particularly large and may resemble small quarries. Therefore, the need and proposed location of any borrow pits should be determined at the planning application stage, as the impact of these facilities (including, impact on water and blasting) needs to be appraised as part of the overall impact of the scheme in accordance with Planning Advice Note 50 Controlling the Environmental Effects of Surface Mineral Workings. Restoration measures for the borrow pits must be detailed as part of the overall development proposals. The location of borrow pits is therefore an important consideration in the layout of a wind farm and should be sited well away from watercourses and not on steep inclines.

2.3 Noise Assessment

There are two distinct types of noise sources within a wind turbine, the mechanical noise produced by the gearbox, generator and other parts of the drive train; and the aerodynamic noise produced by the passage of the blades through the air. The level of detail required will depend on the scale of the proposal and the separation distance between wind turbines and noise sensitive properties. A noise assessment is not required for systems which are less than 20m to the hub and/or less than 32m to the tip of the blade.

A noise assessment will have to take into account:

- The individual effects of both the noise sources
- The cumulative effects of both the noise sources
- The character and sensitivities of the area (including the prevailing winds, landform and particularly noise sensitive receptors such as dwellings).

2.4 Shadow Flicker Assessment

The impact of shadow flicker on buildings and the trunk road network must be given consideration. Shadow flicker is the term used to describe the impact of shadows cast by rotating wind turbine blades. The small diameter and likely

location of micro–renewable turbines greatly reduces the probability of shadow flicker. For larger turbines, shadow flicker can be mitigated by simple measures. These range from planting trees through to shutting down the turbines during periods when shadow flicker could theoretically occur.

An assessment of potential shadow flicker and shadow throw throughout the year should be provided for all buildings and trunk roads within a 10 rotor diameter of the proposed location of the wind turbine.

2.5 Ice Throw

Turbines, under special meteorological conditions, may be covered by ice. If a wind turbine operates in icing conditions, two types of risks may occur if the rotor blades collect ice. The fragments from the rotor may be thrown off from the operating turbine due to aerodynamic and centrifugal forces, or they may fall from the turbine when it is shut down or idling without power production. When ice forms a turbine's own vibration sensors are likely to detect the imbalance and inhibit the operation of machines.

Locating turbines a safe distance from any occupied structure, road, or public use area will mitigate the risk of ice throw.

For trunk roads it is expected that where evidence of vibration and/or climate sensitive technology is provided there should be no need to consider this issue further. If no evidence of this vibration and/or climate sensitive technology is available then the wind turbine should be sited at least 100 metres from the nearest kerb line of the trunk road carriageway.

2.6 Trunk Road Safety Requirements

Wind turbines should not be positioned such that they appear abruptly at a location where drivers are required to manoeuvre, react or make decisions (e.g. junctions, bends etc.). Therefore, it is important to identify the point at which the wind turbine(s) first come into the driver's view so it can be demonstrated that they can be clearly seen in advance of such a location.

Turbines should be set back a minimum distance of 1.5 times the height of the wind turbine (from ground level to the uppermost tip of turbine blade) away from the nearest kerb line of the Trunk Road carriageway to mitigate any potential structural collapse.

For sites near the trunk road, Transport Scotland should be consulted and pre-application discussions are welcomed.

2.7 Built and Cultural Heritage Assessment

Any built and cultural heritage assets will have to be noted, and an assessment of any known or potential impacts carried out. Assets which need to be considered are:

- archaeological sites
- listed buildings

- conservation areas
- historic gardens
- designated landscapes
- local sites of cultural importance

There may be an opportunity to site micro wind turbines in conservation areas or within the curtilage of listed buildings. It will not normally be possible to site turbines on scheduled ancient monuments and it will be difficult to site then on listed buildings. Scheduled Monument Consent or Listed Building Consent would be required in these instances. Care must be taken to ensure respect is paid to the site and setting and to important views and vistas to and from these buildings, monuments and sites. It is important that consideration is given to assets outwith Aberdeen that may affect their setting.

2.8 Tourism, Recreation and Countryside Access

Tourism is of great significant to the Scottish economy and it is important that applications do not have significant negative impacts on areas visible from the development that are valued for their tourism or recreation interests. These include accommodation, business tourism, food and drink, outdoor activities, visitor attractions, nature based tourism and cultural tourism. It is important that the direct impact of the turbines on tourism, recreation and countryside access is given, but also that the LVIA considers the visual impact of the proposal on tourism, recreation and countryside access.

An assessment of the impact on access may be covered in other assessments, and the key considerations are:

- Direct impacts on routes through temporary or permanent closure or diversion of routes
- Changes to character, amenity or intrinsic appeal of routes through changes in surface types or widening (this can have positive effects as well as negative effects)
- Creation of new tracks
- Intrusion into an area enjoyed by recreational users for its semi-natural or wilder qualities by both visual impacts and noise impacts
- Displacement of wildlife enjoyed by recreational users reducing the appeal of the site (this will be informed by the ecological impact assessment)
- Sequential cumulative visual impacts along longer distance linear routes (e.g. the Deeside Way) and in combination/in succession impacts from particular locations where many schemes are visible from one location. This should take into account developments in Aberdeenshire as well if there is a significant degree of visibility from the viewpoint. In terms of impacts on outdoor recreational resources this is unlikely to become an issue unless there will be nearby developments along the boundary with Aberdeenshire

2.9 Public Safety

To inform the potential public safety risk of a wind turbine development an informal risk assessment of the proposed development should be submitted. This should take particular account of

- Proximity of surrounding buildings and roads
- Risk of injury to humans through catastrophic equipment failure

2.10 Wind Regime

The power produced by wind turbines primarily depends on the strength of the wind, and the area swept by the rotor. The actual power output will also depend on the power efficiency of the turbine, wind direction and fluctuations in wind direction. It is important to select the most efficient site and layout for the wind turbines. This would include average wind speeds and wind rose data. The applicant must demonstrate that the proposal is viable after monitoring the site. For micro-renewable turbines evidence and data from four months of monitoring will be required. Renewable turbines will require a longer monitoring period; typically 12 months will be necessary.

2.11 Grid Network

Access to the power electricity transmission and distribution system is required for commercial wind turbines. Micro-renewable turbines can be connected to the grid. Detail would be required on the proposed grid connection or supply to local user, if relevant.

3 Maps

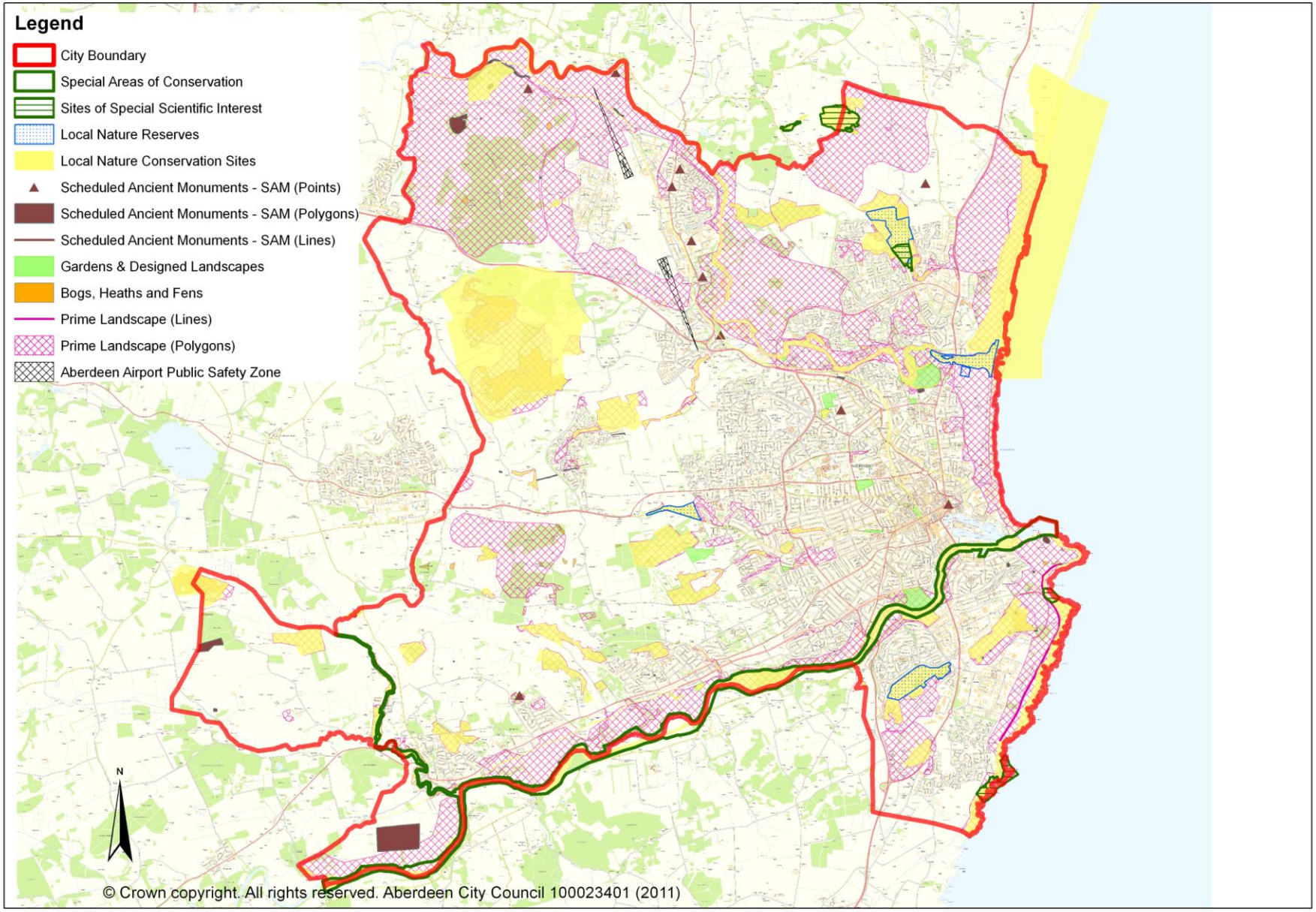
Map 1 highlights constrained areas for wind turbine development areas and spatially shows the following information:

- Special Areas of Conservation
- Sites of Special Scientific Interest
- Local Nature Reserves
- Local Nature Conservation Sites
- Scheduled Ancient Monuments
- Gardens and Designated Landscapes
- Bog land, Heath land and Fens
- Areas of Local Landscape Significance – Primary Landscapes
- Airport Safety Exclusion Zone.

It is important to note that this map does not identify areas of search and there is not a presumption in favour of those areas free from the identified constraints.

These must be considered as constraints to the development of wind turbine developments. There are policies in the local Development Plan and requirements in this Supplementary Guidance to protect promote and enhance these areas. Therefore, proposals within these areas will only be supported if it can be demonstrated that there is little or no impact through the implementation of mitigation measures. There is no available information on areas within the Radar Exclusion Zone and the impact of wind turbines on air safety is assessed by the relevant bodies, these being the Aberdeen International Airport, NATS, the Ministry of Defence and in some instances the Civil Aviation Authority.

Map 1


Legend
City Boundary
Special Areas of Conservation
Sites of Special Scientific Interest
Local Nature Reserves
Local Nature Conservation Sites
Scheduled Ancient Monuments - SAM (Points)
Scheduled Ancient Monuments - SAM (Polygons)
Scheduled Ancient Monuments - SAM (Lines)
Gardens & Designed Landscapes
Bogs, Heaths and Fens
Prime Landscape (Lines)
Prime Landscape (Polygons)
Aberdeen Airport Public Safety Zone
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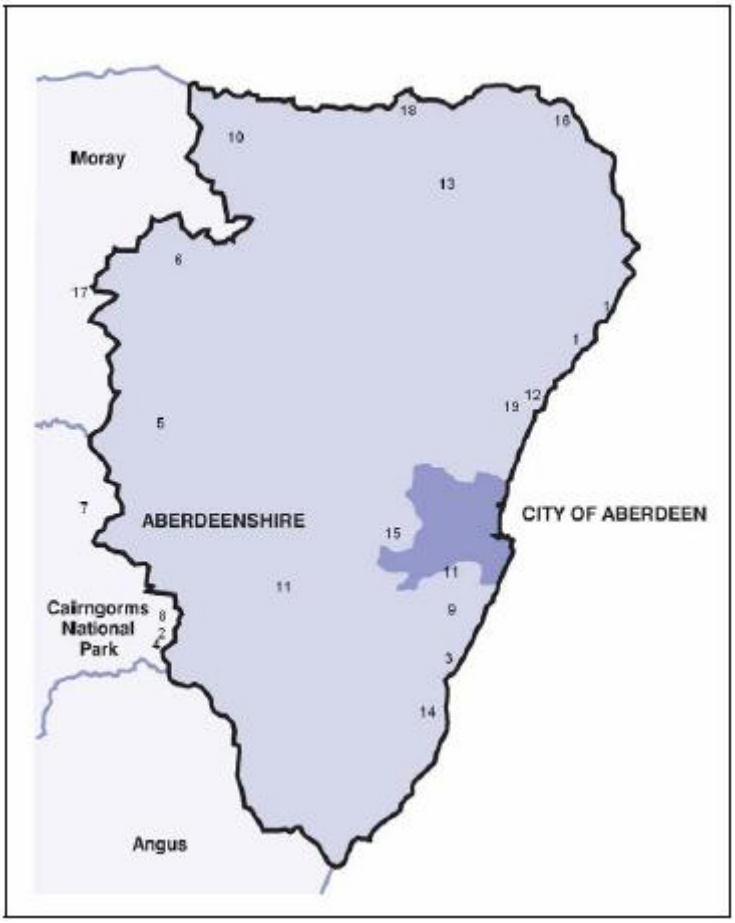
Map 2

This map indicated the location of protected sites further information on the sites listed can be obtained from SNH's SiteLink facility: http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/sitelink/



No	Name	SAC	SPA	RAMSAR
1	Buchan Ness to Collieston Coast	✓	✓	
3	Garron Point	✓		
5	Hill of Towanreef	✓		
6	Mortlach Moss	✓		
9	Red Moss of Netherley	✓		
10	Reidside Moss	✓		
11	River Dee	✓		
12	Sands of Forvie	✓		
13	Turclossie Moss	✓		
14	Fowlsheugh		✓	
15	Loch of Skene		✓	✓
16	Loch of Strathbeg		✓	✓
17	Tips of Corsemaul and Tom Mor *		✓	
18	Troup, Pennan and Lions Head		✓	
19	Ythan Estuary, Sands of Forvie and Meikle loch		✓	✓
Outwith Structure Plan area but in close proximity to it				
2	Dinnet Oakwood	✓		
4	Glen Tanar	✓	✓	
7	Morven and Mullachdubh	✓		
8	Muir of Dinnet	✓	✓	

Further Information

Scottish Planning Policy
http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/newSPP

Aberdeen City and Shire Strategic Development Plan
http://www.aberdeencityandshire-sdpa.gov.uk/home/home.asp

Aberdeen Local Development Plan
http://www.aberdeencity.gov.uk/planning_environment/planning/local_development_plan/pla_local_development_plan.asp

Scottish Government's Specific Advice Sheet - onshore wind turbines
http://www.scotland.gov.uk/Resource/0040/00405870.pdf

Scottish Natural Heritage's 'Siting and designing wind farms in the landscape'
http://www.snh.org.uk/pdfs/strategy/renewables/Guidance_Siting_Designing_windfarms.pdf

Scottish Natural Heritage's 'Natural Heritage assessment of small scale wind energy projects which do not require formal Environmental Impact Assessment' http://www.snh.gov.uk/docs/A669283.pdf

Scottish Natural Heritage - Micro renewables and the natural heritage - Guidance Note. October 2009 http://www.snh.gov.uk/docs/B798082.pdf

Scottish Natural Heritage - Windfarm impacts on birds guidance
http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/windfarm-impacts-on-birds-guidance/

SNH, SEPA. Forestry Commission and Scottish Renewables - The windfarm industry Good Practice During Windfarm Construction
http://www.snh.org.uk/pdfs/strategy/renewables/Good%20practice%20during%20windfarm%20construction.pdf

Dali Rani Nayak, David Miller, Andrew Nolan, Pete Smith & Jo Smith, June 2008. Calculating carbon savings from windfarms on Scottish peat lands - A New Approach
http://www.scotland.gov.uk/Publications/2008/06/25114657/0

Scottish Government Developments on Peatland: Site Surveys and Best Practice http://www.scotland.gov.uk/Resource/Doc/917/0120462.pdf

Scottish Government. 2007 Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments
http://www.scotland.gov.uk/Publications/2006/12/21162303/0

SEPA Land Use Planning System Guidance Note 4 Planning guidance on windfarm developments http://www.sepa.org.uk/planning/energy.aspx

SEPA's Planning, Energy and Climate Change Position Statement
http://www.sepa.org.uk/idoc.ashx?docid=d8d04aac-d2c2-4043-9704-3bd3236c7f04&version=-1

SEPA Guidance A Functional Wetland Typology for Scotland
http://www.fwr.org/environw/wfd95.htm

SEPA Regulatory Position Statement Developments on Peat
http://www.sepa.org.uk/waste/waste_regulation/guidance__position_statements.aspx

SEPA Guidance Construction of River Crossings Good Practice Guide

Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and the Minimisation of Waste
http://www.scottishrenewables.com/static/uploads/publications/a4_developments_on_peatland.pdf

SEPA CAR practical guide link and link to CAR info:
http://www.sepa.org.uk/system_pages/application_forms.aspx#CAR

SEPA PPC information
http://www.sepa.org.uk/system_pages/application_forms.aspx#PPC

'Siting and Design of Small Scale Wind Turbines of between 15 and 50 metres in height' (2012) http://www.snh.gov.uk/planning-and-

http://www.snh.gov.uk/publications-data-and-research/publications/search-the-catalogue/publication-detail/?id=1618

For more information please visit the Forestry Commission Website;
http://alpacorn.forestry.gov.uk:7777/portal/page?_pageid=33,2027847&_dad=portal&_schema=PORTAL

Please get in contact if you wish to discuss your proposal with us:
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