# Aberdeen Planning Guidance 2023: Wind Turbine Guidance (DRAFT)

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### 1. Introduction

#### 1.1 Status of Aberdeen Planning Guidance

This Aberdeen Planning Guidance (APG) supports the Development Plan and is a material consideration in the determination of planning applications.

This APG expands upon the following Aberdeen Local Development Plan policies:

• Policy R7 – Renewable and Low Carbon Energy Developments

#### 1.2 Introduction to Topic / Background

The guidance in this document focuses solely on wind powered renewable energy technologies. Many potential 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.

#### 1.3 Climate Change

This topic relates directly to the climate change emergency given it concerns the development of renewable energy. This ties in with UN Sustainable Development Goal 7: Affordable and Clean Energy and Aberdeen Adapts Goal 4 – Secure utilities and communications.

### 2. Aberdeen Planning Guidance

The guidance in this document covers all wind energy developments including domestic and non-domestic where there is a requirement for planning permission. 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.

What Wind Turbines are allowed without the need for planning permission?

The typical wind energy renewable generating technologies proposed in Aberdeen are likely to fall within the microrenewable category. For domestic use, Class 6G of The Town and Country Planning (General Permitted Development) (Scotland) Order 1992) permits the installation, alteration or replacement of a free-standing micro wind turbine (MWT) provided the installation is not less than 100m from the curtilage of another dwellinghouse, provided it does not result in more than one MWT within the curtilage of a dwellinghouse and provided it is not within a Conservation Area, World Heritage Site, Site of Special Scientific Interest, site of archaeological interest or within the curtilage of a Listed Building.

#### 2.1 Within Which Areas are Turbines Not Supported?

Under Scottish Planning Policy (SPP) 2014 (Paragraph 161) local authorities are required to develop a spatial framework for onshore wind farms. SPP defines constraints for the development of wind farms into two groups, Group 1 and Group 2. Group 1 locations are areas with constraints which make wind turbines unacceptable due to the possible impact on National Parks and National Scenic Areas. There are no Group 1 sites in Aberdeen. Areas with Group 2 constraints require significant protection and these include a number of environmental constraints and 2 km community separation areas.

Map 5 shows a consolidated map of Group 2 constraints. This indicates that using the guidance in SPP there are only a few small areas with potential for wind farm development, referred to in SPP as (Group 3). These areas are

however also covered by Policy NE1 Green Belt in the Aberdeen Local Development Plan 2023. Policy NE1 identifies wind turbines as development that can be supported in principle. 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.

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

Large scale commercial turbines, to which the spatial framework will apply, are defined as developments of more than one turbine and over 25m in height.

#### 2.2 What Information Needs to be Submitted?

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 this Planning Guidance. Further information such as an Environmental Impact Assessment may also be required.

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:

- All the physical dimensions of the turbine including, height to the hub, height to the tip, blade diameter etc.
- 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

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 opinion. 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.

#### 2.3 Visual Considerations

Landscape and Visual Impact Assessment (LVIA)

LVIA is not only concerned with landscapes that are recognised as having special or valuable status, 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 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 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: 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. Please refer to separate Aberdeen Planning Guidance for Landscape.

The LVIA must consider the following:

- The character of the landscape. Is the proposed site a ridge, a hill, a valley or a coastal area for example?
- Landscape quality and value
- Impact of the wind turbine(s) and all associated infrastructure 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 'video montage' 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.

#### 2.4 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 them 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.

Map 2 highlights the scheduled monuments and listed buildings

#### 2.5 Tourism and Recreation Assessment

Impacts upon tourist and recreational infrastructure should be avoided where possible. This includes 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. 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 (including potentially turbines in Aberdeenshire).

#### 2.6 Potential Impact Upon Habitats

Natural Heritage Policy NE3 – 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. Maps 2, 3 and 4 indicate the national and local designations that must be taken into account. The maps include 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. It is the duty of every public body and office-holder, in exercising any functions, to further the conservation of biodiversity. In considering applications it is therefore 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 maps in Section 9 Supplementary Guidance: Wind Turbine Developments, Page 5

Nature Scot has also produced guidance called 'Assessing the Impact of Small Scale Wind Energy Proposals on the Natural Heritage'.

#### 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 Scottish Forestry's policy on the loss of woodland; see **The Control of Woodland Removal (2009)** for further detail.

#### Geology

Nigg Bay, Don Estuary, Rubislaw Quarry, BrimmondHill 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. 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

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 reuse 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.

#### Wetlands and Watercourses

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 should be designed to avoid the need for new watercourse crossings such as bridges or culverts. 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.

Map 7 shows areas of flooding however it will be the responsibility of the applicant to confirm the details of the specific site.

#### 2.7 Borrow Pits

Borrow pits can be particularly large and may resemble small quarries. Scottish Planning Policy 2014 is clear that Borrow Pits should only be used in exceptional circumstances when there is significant environmental or economic benefit over obtaining material from local quarries. It also states that they should be time limited, tied to a particular project and that appropriate reclamation measurers should be in place.

Therefore, there will be a presumption against Borrow Pits unless a clear need and strategy is identified at the Planning Application Stage. This should include the proposed location of any borrow pits to allow the impact of these facilities (including, impact on water and blasting) 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 proposed 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.

#### 2.8 Technical and Amenity Considerations

#### Safety Assessment

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 and risk of injury to humans through catastrophic equipment failure.

#### **Noise Assessment**

All wind turbines above 50kW require to be assessed for noise in accordance with ETSU-R-97 The Assessment and Rating of Noise from Wind Farms (ETSU) and having regard to the methods described in the Institute of Acoustics Good Practice Guidance to the Application of ETSU-R-97, May 2013. The scope and requirements of the assessment will depend on the size of the turbine(s) and the size and impact of the project.

Applications for small developments and single turbines i.e. up to a rotor diameter of 16m may be considered in terms of the Renewable UK Small Wind Turbine Standard of January 2014, where appropriate and in agreement the Environmental Health Services.

Discussions with the Environmental Health Service should be initiated at an early stage to agree the assessment methodology, including the requirement for a background noise survey and noise levels that will be acceptable from the proposed development.

Assessments should detail the following information:

- a. Accurate twelve digit grid references for the turbines;
- b. Accurate twelve digit grid references for the noise sensitive receptors;
- c. Elevations of turbines and receptors;
- d. Details of any land ownership or financial involvement at noise sensitive receptors;

e. Sound power level details for the turbine. Broadband and A-weighted octave band data required, together with uncertainty figures and any tonal penalty;

f. Ground factor used;

g. Atmospheric conditions for Aatm;

h. Noise wave propagation height;

i. Unless it can be shown that it would be possible to meet the simplified noise condition of 35 dB LA90 (10 min) at wind speeds up to 10m/s measured at 10m height, then a background noise survey will require to be carried out.

j. The cumulative noise effect from existing, consented or approved wind turbines. When considering the cumulative effect of other turbines regard should be had the consented noise levels detailed in the approval.k. Information regarding any valley effect. It will be necessary to demonstrate whether or not, a 3dB correction is required in respect of the valley significantly sloping ground effect.

If background surveys are carried out then the following details are required:

- Wind shear methodology
- Best fit curve polynomials for daytime and night time (there must be sufficient data collected across the range of wind speeds from 4m/s to 12m/s
- Location of monitoring positions
- Method to record rainfall (noise data affected by rainfall or extraneous noise sources e.g. dawn chorus, agricultural activities, aircraft etc should be excluded).
- Equipment used including the type of wind shield fitted to the microphone (the preferred wind shield is a large diameter double layer item).

A standard wind shield may not be suitable and it is recommended that the sound level meter manufacturer be consulted to confirm the suitability of any wind shield used. When considering the cumulative impact of large and small wind turbines the preferred option is to use the ETSU-R-97 guidance for large wind and the BWEA guidance for small wind and add the two together. As mentioned in (j) above, when considering the cumulative effect of other turbines regard should be had the consented noise levels detailed in the approval.

#### Shadow Flicker

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.

#### 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.

#### Trunk road safety

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 will be consulted and pre-application discussions are advised in such cases.

#### 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 Control section of the SEPA website.

#### **Efficiency**

#### 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.

#### 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.

#### 2.9 Decommissioning

Due to the developing nature of the technology and physical pressures placed on them, it is likely that all wind turbines will become obsolete or redundant. It is therefore important that at the outset the decommissioning of a turbine or turbines is considered.

Scottish Planning Policy 2014 requires that Local Authorities, depending on the scale of the development, include conditions relating to decommissioning including any ancillary infrastructure and site restoration. It also states that robust planning obligations may be required to ensure such restoration.

To this end the Council will condition the site restoration based on an agreed plan and may require a bond or similar guarantee to ensure its execution. Therefore, as part of the planning application a decommissioning plan should be submitted and agreed with the planning authority.

The decommissioning plan should include details for the removal of the turbine, any ancillary infrastructure and the reinstatement of the site to its original state, or to a level agreed with the planning authority, and a program for the completion of the works.

Where a programme is not agreed all works must be completed within a period of 1 month of the removal of the wind turbine.

#### 3. Maps

Map 1: Aberdeen Airport Safeguarding Map

This map shows the areas of the city which need to be safeguarded for the airport and the relevant development heights.

Map 2: Environmental Constraints

This map shows a series of environmental and heritage constraints.

### Map 3: Landscape and Environmental Constraints

This map 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 with potential for wind farm development (Group 3) 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 4: European Protected Sites

This map indicates the location of European protected sites.

Map 5: Group 2 Constraints overlaid with Green Belt.

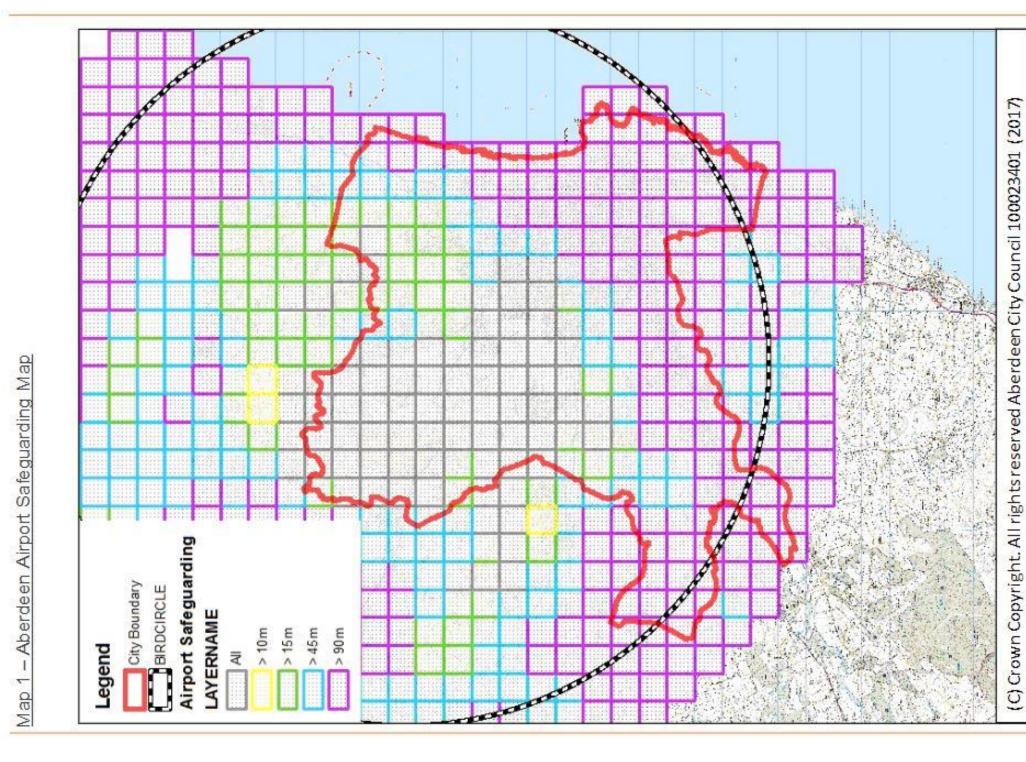
This map shows the extent of all the Group 2 constraints, which are encompassed by the 2km buffer zones. Areas outwith these Group 2 areas are classed by SPP as Group 3 Areas with potential for wind farm development. The Map also shows the extent of the Aberdeen City Green Belt which falls under Policy NE2 of the Aberdeen Local Development Plan 2017

#### Green Belt

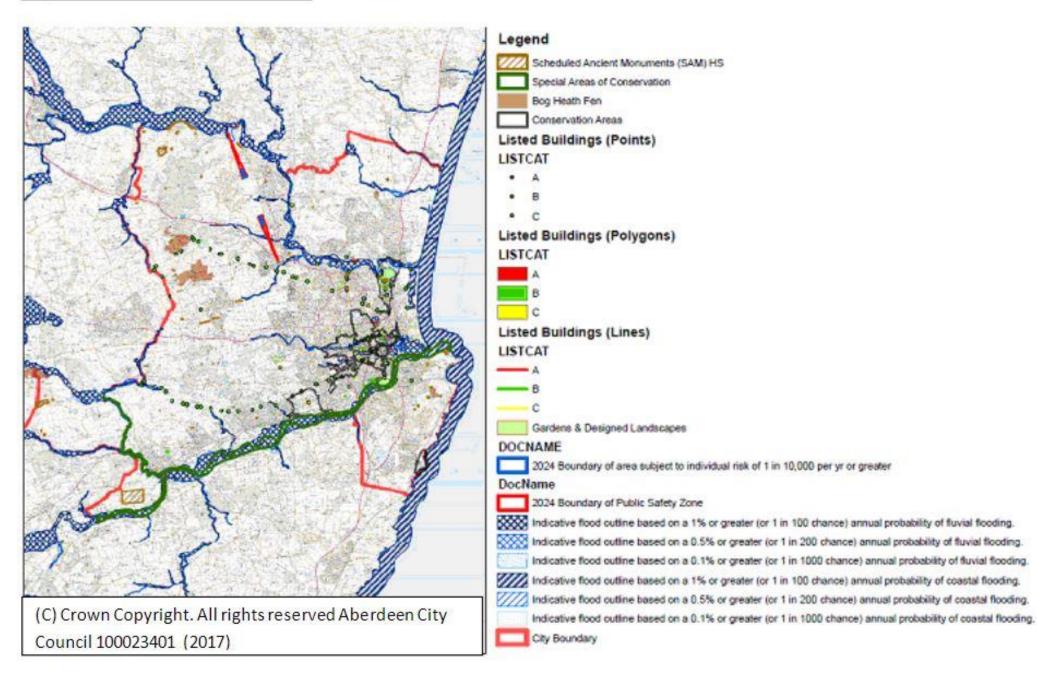
While the Green Belt is not a Group 2 constraint and has not been included as such, it is important for clarity to point out the relevance of the policy in this document, with Map 5 representing this graphically.

In compliance with Paragraph 52 of Scottish Planning Policy 2014 which states, "Local development plans should describe the types and scales of development which would be appropriate within a green belt", Wind Turbine development has not been identified as a suitable use in Policy NE2: Green Belt, of the Aberdeen Local Development Plan 2017.

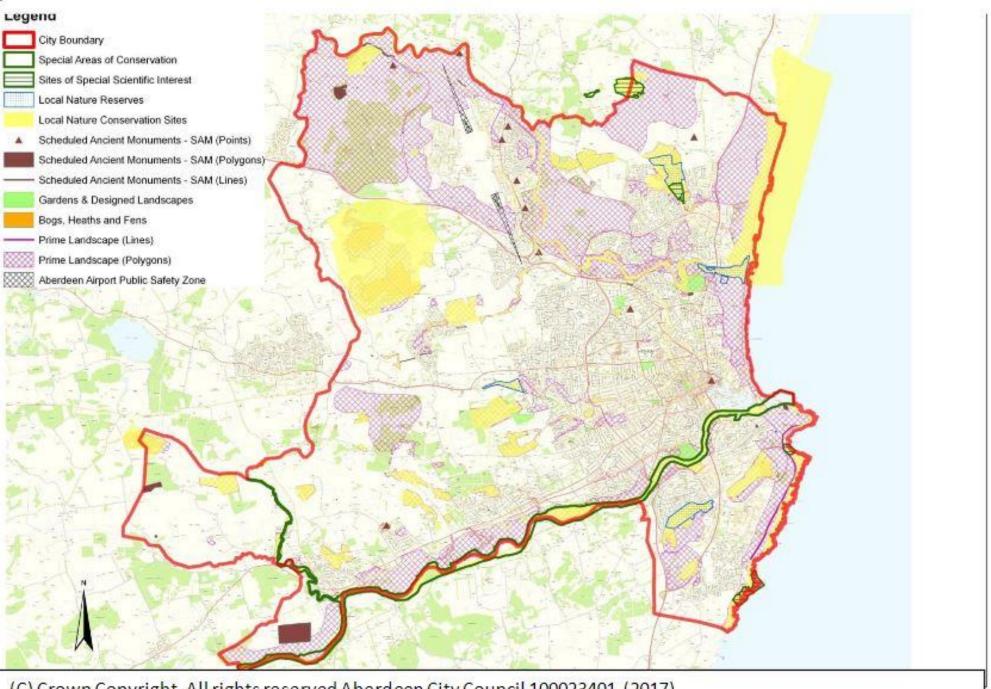
As such there will be a presumption against such developments in the Aberdeen Green Belt except where a small turbine can be appropriately sited and designed.



### Map 2 - Environmental Constraints



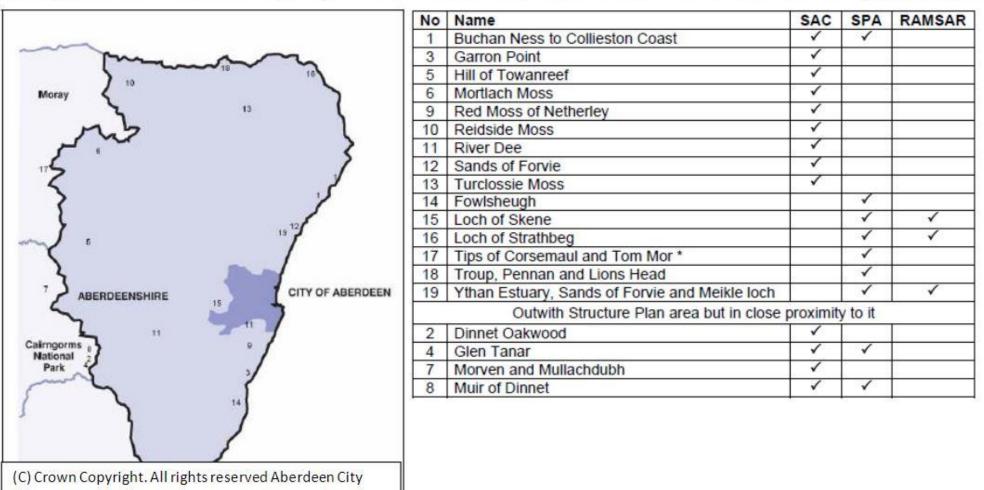
## Map 3 – Landscape and Environmental Constraints



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#### Map 4:

This map indicates the location of European protected sites further information on the sites listed can be obtained from SNH's SiteLink facility



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