

**aberdeen** local development plan

# Supplementary Guidance: Wind Turbine Development in Aberdeen City

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## 1. Introduction

The development of renewable energy technologies, on all scales, is supported by Aberdeen City Council. A positive approach to renewable developments will help to meet the Scottish Government's target for 40% of Scotland's electricity to be generated from renewable sources by 2020. Renewable technologies are becoming more common place within Scotland, and the range of technologies available includes wind power, solar power, heat pumps and biomass boilers. The guidance in this document focuses on wind power renewable energy technologies. Scotland has a good wind resource which should be taken advantage of however this should not be achieved at the detriment of built and natural heritage or air safety. There needs to be a balance between a commitment to conserve and enhance our built and natural heritage, and supporting and promoting the growth of renewable energy generating developments.

## 2. Aim of the document

The aim of this document is to provide concise information and guidance to assist in the positive planning for wind powered renewable energy developments of different scales in Aberdeen. This guidance highlights the key issues that must be considered when planning for wind energy developments. Planning for wind energy development is complex. Variables in site location, turbine heights, styles and scale of development make it difficult to provide certainty on definitive solutions for wind turbine developments without detailed assessment and appraisal.

The document is divided into two distinct parts. The first part outlines the level of information that will be required with each application to ensure a well informed decision can be made. This list is not exhaustive but does outline the main considerations that need to be addressed with any application. The second part of the guidance is map based and highlights areas within Aberdeen City Council's boundary where wind turbine development may be significantly constrained.

## 3. What this guidance covers

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 this 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.

This document gives guidance for both micro-renewable and renewable energy turbine developments. Please see appendix 1 for further guidance on definitions of micro-renewable and renewable energy developments. The material considerations planning officers will regard when determining or recommending a wind turbine application are consistent no matter what the scale of the application is; however, the level of detail required for each

application is dependent on what is proposed and a number of other material considerations, as outlined below.

#### 4. 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 the supporting information each application to address the issues 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 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 the British Aviation Authority, National Air Traffic Services and Ministry of Defence on all applications for wind turbines. The Civil Aviation Authority also required to be consulted if the turbine is over 90 meters. Applicants are encouraged to submit a Wind Farm Developers Proforma with their application. The proforma can be found at [http://www.bwea.com/docs/developers\\_proforma.doc](http://www.bwea.com/docs/developers_proforma.doc)  
A copy is also attached in appendix 2 of this guidance.

As a design principle, it is desirable that, where a wind energy development already exists nearby, a similar scale and design of turbine should be proposed in any new developments. This however is heavily dependent on topographical features and other material considerations outlined below.

##### 4.1 Technical information

The detail and specification of the proposed wind turbine(s) will need to be provided. Detail will need to be given on:

- the type of turbine proposed,
- the rated generating capacity of the turbine,
- the materials and colour of the wind turbine components,
- the foundations 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, and
- details of any landscaping works proposed.

##### 4.2 Planning statement

The following documents set the baseline policy on which applications will be judged. This does not form an exhaustive list. A planning statement needs to

be submitted with the planning application which evaluates the proposal against the following documents:

- Scottish Planning Policy
- Aberdeen City and Shire Strategic Development Plan
- Aberdeen City Council Local Development Plan
- Scottish Government's Planning Advice Note 45 Annex
- Scottish Government's Specific Advice Sheet - onshore wind turbines
- Scottish Natural Heritage's Siting and designing wind farms in the landscape
- Aberdeen City Councils Supplementary Guidance on Wind Turbine Developments

#### 4.3 Ecological assessment

The impacts of proposed turbines on wildlife, habitat, ecosystems and biodiversity will need to be considered. Ecological assessments of proposed wind turbine sites will need to:

- outline any nature designations for the site or that may immediately adjoin it such as Sites of Scientific Interest, Special Protection Areas and Special Areas of Conservation,
- classify and evaluate the natural habitat and species,
- classify and evaluate the agricultural context,
- outline any hydrological impacts,
- evaluate the impact of a wind turbine(s) on these, and
- discuss the scope of mitigation on the possible and proposed impacts.

#### 4.4 Landscape assessment

The key natural heritage issue relating to turbines is likely to be that of landscape particularly in rural areas and on the urban edge. The ability of the landscape to absorb development often depends on the features of the landscape. This can also be influenced by careful siting and design. 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?IID=31730&slD=14344>). Applicants need to:

- consider the character of the landscape, and outline if the proposed site is a ridge, hill, valley, coastal area and the vegetation present,
- evaluate the landscape on quality, value and scale terms,
- consider the impact of the wind turbine(s) on the landscape,
- consider the cumulative impact of the proposed application with regard to wind turbines that are already in existence or where planning permission has been approved.

#### 4.5 Visual assessment

A visual assessment should be submitted. This assessment should be carefully scoped so that it is appropriate to the size and scale of the development and the likelihood of significant landscape and visual impacts, including cumulative effects. The assessment should include:

- a viewpoint analysis,

- determination of the zone of theoretical visibility of the proposed development,
- evaluation of the visual impact,
- the scope for mitigation of those impacts, and
- details of the location, visual impact and the restoration of borrow pits,
- consider the cumulative impact of the proposed application with regard to wind turbines that are already in existence or where planning permission has been approved.

Evaluation of impacts should include consideration of alternative siting for the turbine(s) (as well as alternative colouring), borrow pits and ancillary equipment. 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.

#### 4.6 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).

#### 4.7 Shadow flicker assessment

Shadow flicker is the term used to describe the impact of shadows cast by rotating wind turbine blades through constrained openings, such as the windows of neighbouring properties. 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 tree belts between the affected window and the turbines 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 dwellings within a 10 rotor diameter of the proposed location of the wind turbine.

#### 4.8 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 icing occurs the turbines' 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. Warning signage may be a useful precaution.

#### 4.9 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, and
- local sites of cultural importance.

There may be 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. 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.

#### 4.10 Tourism and countryside access assessment

The draw of Scotland as a tourist destination is well known. Turbine developments will need to assess any visual and amenity impacts on tourist and recreational facilities or tourism and countryside access.

Assessment will need to include the impacts on:

- core path network,
- footpaths,
- cycleways,
- bridleways, and
- public paths.

#### 4.11 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, and
- risk of injury to humans through catastrophic equipment failure or ice throw.

#### 4.12 Electro-magnetic interference (aviation and communication)

The British Aviation Authority, Civil Aviation Authority and Ministry of Defence should be consulted on proposed wind turbines in accordance with their guidance 'Wind energy and aviation interim guidelines', please see

<http://www.bwea.com/pdf/Wind-Energy-and-aviation-interim-guidelines.pdf>

These bodies will in turn consult other organisations that could have an interest in wind turbine proposals in terms of flight paths, radar and navigation aids, television and radio transmissions. Details of possible adverse effects and appropriate measures to alleviate effects should be submitted with the application.

The proforma in Appendix 1 of this document was compiled by the Civil Aviation Authority, the Ministry of Defence, the National Air Traffic Service and the British Wind Energy Association to assist in the processing and assessment of wind turbine applications and applicants are encouraged to complete it.

#### 4.13 Wind regime

The power produced by wind turbines depends on two key factors – the strength of the wind, and the area swept by the rotor. Assessing whether a particular site will harness sufficient wind power usually entails using historical meteorological data, with annual mean wind speed data available from the Meteorological Office, and obtaining information from anemometers on site.

The applicant must demonstrate that the proposal is viable. It needs to be shown that there is enough wind speed and this can reasonably be predicted 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.

#### 4.14 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.

#### 4.15 Other issues

A number of other issues will need to be considered when proposing development. These include:

- community consultation for renewable energy developments,
- local employment/business considerations,
- any associated community benefits, and
- cumulative impacts.

## 5. Map of constrained areas for wind turbine development

The map below highlights areas within the city that is deemed to be constrained for the development of wind turbines. These are the areas the Council considers to be unsuitable for wind turbine developments. Areas falling within the undesirable category include:

- Residential settlements, including a buffer of 10 rotor diameters from any proposed turbine
- Sites of Special Scientific Interest
- Special Areas of Conservation
- Scheduled Ancient Monuments
- Local Nature Conservation Sites
- Airport Safety Exclusion Zone
- Radar Exclusion Zones
- Areas of Local Landscape Significance – Primary Landscapes
- Gardens and Designated Landscapes
- Opportunity Sites in the Aberdeen Local Development Plan

Within the constrained areas, wind turbine developments will not be permitted unless it can be demonstrated that the proposed development offers exceptional benefits and that these outweigh any adverse environmental impacts. The map does not outline those areas within the Radar Exclusion Zone. The impact of wind turbines on air safety is assessed by the relevant bodies, these being the British Airports Authority, the National Air Traffic Services, the Ministry of Defence and in some instances the Civil Aviation Authority.



**Undesirable Areas**

Airport Safety Zone

Gardens and Designated Landscapes

Opportunity Sites

Priority Habitats

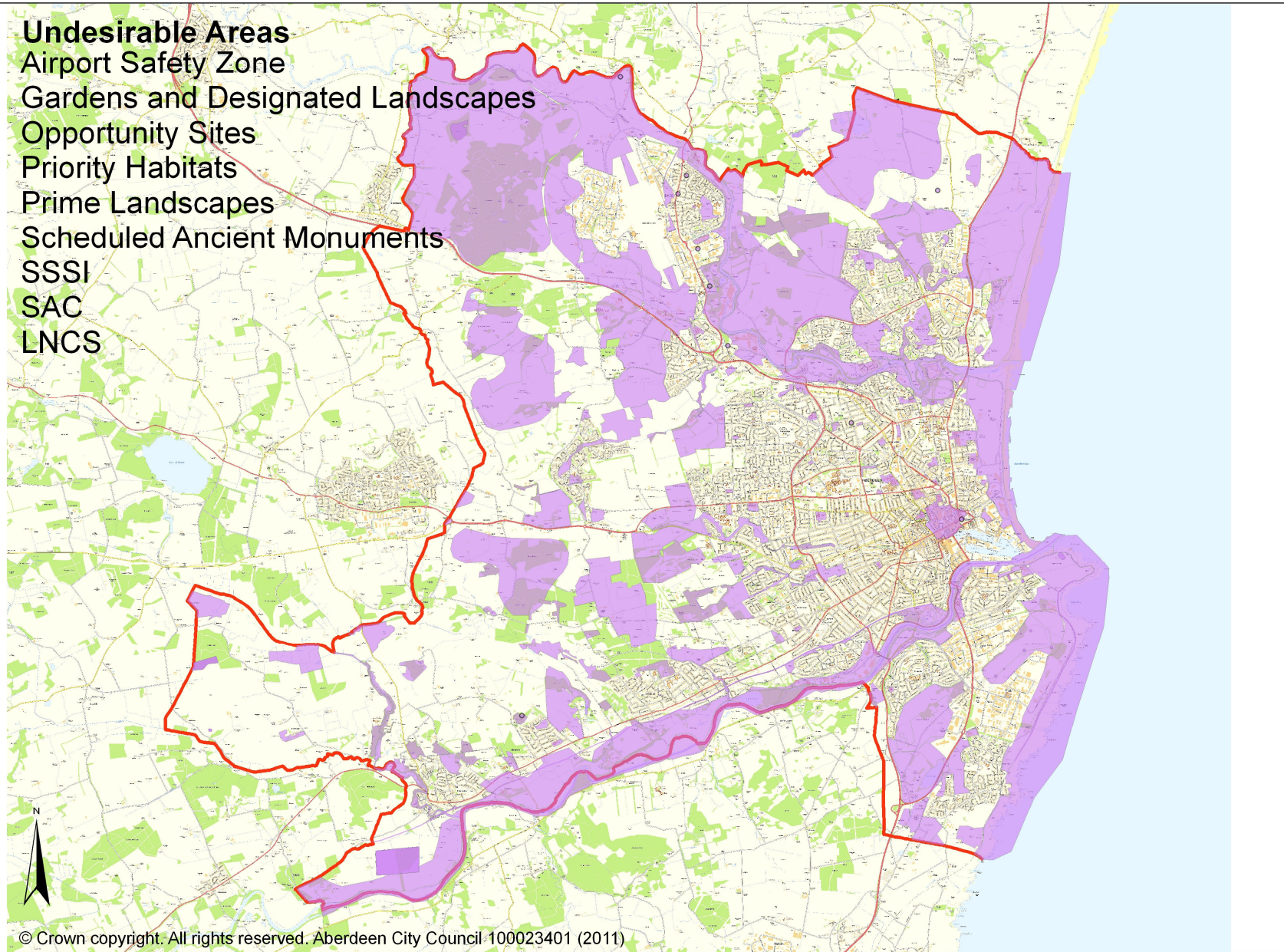
Prime Landscapes

Scheduled Ancient Monuments

SSSI

SAC

LNCS



**For further information please see:**

Scottish Planning Policy

Aberdeen City and Shire Strategic Development Plan

Aberdeen Local Development Plan

Scottish Government's Planning Advice Note 45 Annex

Scottish Government's Specific Advice Sheet - onshore wind turbines

Scottish Natural Heritage's 'Siting and designing wind farms in the landscape'

Scottish Natural Heritage's 'Natural Heritage assessment of small scale wind energy projects which do not require formal Environmental Impact Assessment'

The British Wind Energy Association 'Wind energy and aviation interim guidelines'

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## APPENDIX 1: Micro-Renewable and Renewable Energy Developments

To clarify the distinction between micro-renewable and renewable wind turbine technology is it helpful to classify turbines depending on the size and number proposed in one development.

Classification	Description	Approximate hub height/blade diameter
Single micro-renewable	A single turbine which produces less than 0.05MW capacity for the production of electricity.	<20m to hub and/or <32m to tip
Cluster micro-renewable	A cluster of turbines which produce less than 0.05MW capacity for the production of electricity.	<20m to hub and/or <32m to tip
Single renewable	1 turbine of installed capacity between 0.05MW and less than 3MW	20-40m to hub and/or 32-65m to tip
Cluster renewable	2-3 turbines or installed capacity between 3MW and less than 6MW	>40m+ to hub and/or > 65+ tip
Small scale renewable	4-10 turbines or installed capacity between 6MW and less than 16 MW	>40m+ to hub and/or > 65+ tip
Medium scale renewable	11-20 turbines or installed capacity between 16MW and less than 31MW	>40m+ to hub and/or > 65+ tip
Large scale renewable	21 or more turbines or installed capacity greater than 31MW	>40m+ to hub and/or > 65+ tip

To date most applications have fallen within the single micro-renewable, cluster micro-renewable or single renewable category.

# Civil Aviation & Ministry of Defence Safeguarding

## NOTICE TO WIND FARM DEVELOPERS

Please submit a completed application form for all new or revised onshore and offshore wind farm plans. This form has been compiled in consultation with the British Wind Energy Association. Its purpose is to standardise the information provided and to expedite the assessment of your proposed wind farm development. Assessment is made against air safety and defence interests, through evaluation of the possible effects on air traffic systems, defence systems and low flying needs.

## NOTICE TO PLANNING AUTHORITIES

This form has been compiled with the assistance of the Civil Aviation Authority (CAA), the Ministry of Defence (MOD), the National Air Traffic Service (NATS) and the British Wind Energy Association (BWEA), to assist in the processing and assessment of wind farm applications. It is important that copies of this form are forwarded within the planning consultation process. This will help these organisations trace their records of any earlier consultations, as well as provide them with the relevant information for their assessments.

## WHAT TO DO WITH THIS FORM

Please provide as much detail as possible by **filling in the shaded areas**. If the specific turbine and/or exact positions have yet to be established then fill in the likely turbine size (hub height, rotor diameter) and boundary points as a minimum. On completion send copies to both the following addresses.

[deopsnorth-lmswind@de.mod.uk](mailto:deopsnorth-lmswind@de.mod.uk)

or -

St George's House  
Kingston Road  
Sutton Coldfield  
B75 7RL

[windfarms@caa.co.uk](mailto:windfarms@caa.co.uk)

or -

Directorate of Airspace Policy  
K6 Gate 3  
CAA House  
45-49 Kingsway  
London, WC2B 6TE

It is important that a copy of this form is retained for inclusion with subsequent planning applications at the same site. If no application has been made prior to a planning application, please include a completed form in your planning application.

Wind Farm Name	
Also known as:	
Developers reference	
Application identification No.	
Related/previous applications (at or near this site): Provide reference names or numbers	

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<b>Developer Information</b>	
<b>Company name:</b>	
<b>Address:</b>	
<b>Contact:</b>	
<b>Telephone:</b>	
<b>Facsimile:</b>	
<b>e-mail:</b>	

<b>Relevant Wind Turbine Details</b>	
<b>Wind turbine manufacturer:</b>	
<b>Wind turbine model:</b>	
<b>Wind farm generation capacity (MW)</b>	<b>Number of turbines</b>
<b>Blade manufacturer</b>	
<b>Number of blades</b>	
<b>Rotor diameter</b>	Meters
<b>Rotation speed (or range)</b>	Rpm
<b>Blade material including lightning conductors</b>	
<b>Wind turbine hub height</b>	Metres
<b>Tower design (* delete as required)</b>	* Tubular      * Lattice
<b>Tower base diameter/dimensions</b>	Metres
<b>Tower top diameter/dimensions</b>	Metres

<b>Comments</b>
Are there any details or uncertainties that may be helpful to add ?

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## Turbine Locations

Please provide as much information as you can. The position and height above sea level of every machine if available, the site boundary if not. The height above sea level is the above ordinance datum (AOD) used to specify all heights on OS maps. Please note grid references **and** latitude/longitude and must be included. For co-ordinate conversion: [www.gps.gov.uk](http://www.gps.gov.uk)

An Ordinance Survey (OS) map, or maritime chart, should be submitted with this pro-forma, showing locations of proposed turbine/turbines or scheme boundaries. Please number the turbines or boundary points on the map, to correlate with the information provided below.

**Copy this page as necessary** to account for all turbines or boundary points, or attach an excel spreadsheet with wind turbine coordinate information.

<b>Wind farm Name &amp; Address:</b>	
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<b>Turbine no.</b>		<b>Height AOD (m) of tower base</b>						
<b>Grid Reference</b>					100 km square letter(s) identifier			
Easting (10 m)					Northing (10 m)			
	Degrees			Minutes		Seconds		
<b>Latitude</b>								
<b>Longitude</b>								

<b>Turbine no.</b>		<b>Height AOD (m) of tower base</b>						
<b>Grid Reference</b>					100 km square letter(s) identifier			
Easting (10 m)					Northing (10 m)			
	Degrees			Minutes		Seconds		
<b>Latitude</b>								
<b>Longitude</b>								

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<b>Grid Reference</b>					100 km square letter(s) identifier			
Easting (10 m)					Northing (10 m)			
	Degrees			Minutes		Seconds		
<b>Latitude</b>								
<b>Longitude</b>								

<b>Turbine no.</b>		<b>Height AOD (m) of tower base</b>						
<b>Grid Reference</b>					100 km square letter(s) identifier			

Easting (10 m)					Northing (10 m)				
	Degrees			Minutes		Seconds			
<b>Latitude</b>									
<b>Longitude</b>									

**CONTACT US**

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

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