

Scottish Natural Heritage

Assessing the impact of small-scale wind energy proposals on the natural heritage

Guidance



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Version 3



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1. Introduction

Scottish Natural Heritage (SNH) view groups of three or fewer wind turbines with an output greater than 50kW to be ‘small-scale wind energy’, even when the turbines themselves might be quite large. This small-scale wind energy development makes a valuable contribution to managing climate change, but it is important to ensure that it happens in the right places and that natural heritage impacts are minimised.

There is however a limit to the engagement SNH is able to have with individual small-scale wind energy proposals, and this will normally be restricted to proposals that require an Environmental Impact Assessment (EIA), or where a protected area is likely to be affected (see our [Service Statement for Planning & Development](#)).

This guidance aims to help applicants and planning authorities consider the natural heritage impact of small-scale wind energy proposals without the need for direct input from SNH. The guidance seeks to promote a consistent and proportionate level of assessment, but ultimately it is for the planning authority to determine what is required. In some locations this may differ from what we suggest.

For smaller wind energy development of less than 50kW, please refer to our guidance on [micro-renewables](#).

2. Encouraging a spatial approach to small-scale wind energy development

We strongly encourage planning authorities to plan spatially for small-scale wind energy projects. We will support this strategic work through staff engagement and capacity building. Where necessary and resources allow, we will fund specialist capacity studies if these will deliver benefits for the natural heritage. Spatial planning should build on the work done to plan for larger wind farms, with further analysis undertaken to consider how small-scale development can sit alongside them.

Given the expanding development of small-scale wind energy, good spatial planning is critical to achieving a balance between social, economic and natural heritage objectives. The requirements for a spatial framework are set out in [Scottish Planning Policy](#). Planning authorities should also consider the following factors in relation to small scale wind:

- the appropriate **scale** of turbines;
- design guidance in relation to **turbine form and location**;
- **cumulative impacts** on bird and landscape interests, including the interactions with larger scale wind energy.

3. Assessing the impact of small-scale wind energy developments

It is the responsibility of the planning authority to clearly set out the appropriate level of assessment required to determine the risk to the natural heritage. We recommend consideration of the potential impacts on:

- Landscape;
- Protected areas;
- Protected habitats and species.

Specific considerations also apply to the construction stage and further guidance is provided below.

3.1 Landscape

Poorly located wind turbines can have a significant impact on landscape and visual amenity interests. The impacts can be particularly significant if the turbines are too large for the receiving landscape, especially in lowland, populated landscapes where the scale of the turbines will be more apparent.

We acknowledge that a simplified form of assessment is more appropriate for small-scale development. Whilst the level of assessment required will vary depending on the sensitivity of the location of the turbines, we recommend three indicative levels of assessment based on different wind turbine heights (to blade tip) as described below.

An appropriate study area should be identified on a case-by-case basis, based on a clear rationale derived from a Zone of Theoretical Visibility (ZTV) map. Further guidance on this, including the selection of viewpoints, can be found in [Visual representation of wind farms](#).

When assessing small-scale wind energy proposals it is important to identify a list of representative viewpoints, rather than simply include all of the 'important' viewpoints in the study area. Further guidance on this is provided in the [Guidelines for Landscape and Visual Impact Assessment](#).

Given the cost of photographing and assessing viewpoints it is important that the number agreed is proportionate to the likely impacts of the proposal. 'Key viewpoints' refer to those which are likely to influence the outcome of the planning application.

The height thresholds below are indicative. For example, a 100m turbine in a low sensitivity location will require less assessment than a 55m turbine in a more sensitive landscape. Therefore, the recommendations should be tailored to the height of the turbine and the sensitivity of the location. Our guidance on [Siting and designing wind farms in the landscape](#) provides further advice on turbine design and siting.

Although we have advised that cumulative assessment is carried out for turbines over 50m height, such information/ assessment may well be required for the smaller height categories. This should be determined by the planning authority.

The majority of proposals will require grid connection and may require associated infrastructure (such as substations, access tracks, anemometers, etc). The impact of this infrastructure should be considered as part of the assessment described below.

Recommended levels of landscape appraisal based on wind turbine heights:

(i) Landscape appraisal for turbines of less than 15m in height

For turbines of less than 15m (outwith National Scenic Areas)¹, a formal landscape and visual impact assessment (LVIA) is less likely to be required. However, detailed information on the location and design of the proposal should be provided to the planning authority. It is then for the planning authority to determine whether any additional supporting information for the planning application is necessary. Basic ZTV studies, photomontages and/or wireline drawings may be helpful in certain locations.

(ii) Landscape appraisal for turbines of between 15m and 50m height

The precise detail should be agreed by the planning authority but, as a minimum, we recommend:

- a ZTV map covering an area up to 15km (radius) from the turbine/ outermost turbines; and
- wireline drawings and/ or photomontages from a **limited** number of key viewpoints.

(iii) Landscape appraisal for turbines over 50m in height

For turbines of this scale, a more detailed LVIA is likely to be required. We recommend that the LVIA, as a minimum, should include:

- a ZTV map out to 20km (may need to be larger radius for very large turbines);
- visualisations and photomontages, focusing on key viewpoints. The number and location of viewpoints should be proportional to the scale of the development and the sensitivity of the location, and should be agreed with the planning authority. In most locations between 5 and 10 viewpoints should be sufficient;
- an assessment of the sensitivity of the landscape, magnitude of change and residual impacts;
- a base plan map of all other wind turbine proposals in the public domain to 20km.

The assessment should focus on the likely key landscape and visual interactions of the proposal with other constructed, consented or applied-for wind energy schemes, and other significant developments within a 20km radius of the site.

In certain circumstances, for example where sequential impacts with other developments may be a key issue, it may be appropriate to extend the study area but this is less likely to be required for small developments. Our guidance on [cumulative effects](#) provides further information.

¹ Activities in a NSA requiring a planning application and consultation with SNH:

- Erection of buildings and structures over 12 meters high (Circular 9/1987)

3.2 Protected areas

All developers of small-scale wind schemes should undertake a basic desk study to ascertain if their proposal is likely to affect any protected area. These areas include:

- Special Protection Areas (SPAs), Special Areas of Conservation (SACs) (including candidate sites), and Ramsar sites;
- Sites of Special Scientific Interest (SSSIs);
- National Nature Reserves (NNRs);
- Geological Conservation Review sites²;
- National Scenic Areas (NSAs).

The planning authority may also wish to see consideration of potential impacts on any regional / local natural heritage designations.

The onus is on the developer to collate relevant information, conduct a preliminary assessment, and present this to the planning authority. In order to establish all potential scenarios where there could be an impact on a protected area from a development, we recommend that the developer check for all protected areas within a 20km radius of the proposal using our online mapping tool [SNHi](#).

Establishing whether or not a proposal is *within* a protected area is relatively straightforward using our SNHi information service. Associated infrastructure such as access roads and grid connection should also be considered.

Determining whether or not a proposal *outwith* a protected site could affect the site requires further consideration. The key question is whether the proposal could affect the site, for example by:

- effects on species which use the protected area but move outside this area to feed or for other activities;
- disturbance during construction and operation;
- impacting on the special qualities of a landscape designation;
- run-off or dust from construction works.

It will be possible to discount any likely impacts on most protected areas that aren't in close proximity because of the separation distance and lack of ecological connectivity. The possible exceptions are:

- protected areas (notably SPAs) that are designated for birds that can forage over long distances;
- protected areas that are designated for wetland or freshwater features in the downstream catchment.

Assessing connectivity to designated sites

- **SPAs**
For SPA bird interests, our guidance on connectivity to SPAs should be consulted as a first step in assessing the risks from proposals within 20km.

² The features of most GCRs are notified as features of SSSIs, but not all.

Many species do not travel as far as 20km and sites designated for those species can be quickly discounted. Applicants may wish to record/ present this information to the planning authority in the form of a matrix (see example in **Annex 1**).

Our guidance on [Assessing impacts to pink-footed and greylag geese from small-scale wind farms in Scotland](#) should also be referred to in situations where small-scale wind energy proposals lie within the core foraging range from SPAs classified for these species. In most cases, using this guidance, the applicant / planning authority should be able to conclude that there will be no likely significant effect on these SPAs.

– *Freshwater SSSIs and SACs*

If the development proposal is likely to have a hydrological connection with a wetland or freshwater protected area (including riverine SSSIs or SACs) we advise that applicants provide the planning authority with an outline construction method statement (CMS) or construction environmental management plan (CEMP) showing how the works will avoid impacts. We recommend that any construction works undertaken upstream of the protected site are carried out in compliance with SEPA's Pollution Prevention Guidelines and any authorisations required under the Water Environment (Controlled Activities)(Scotland) Regulations 2005 (CAR 2005).

A Habitat Regulations Appraisal (HRA) is required where a plan or project could affect a European site. More information on HRA is available [on our website](#). Where the proposal has a likely significant effect on a Natura site, an appropriate assessment is required and we should be consulted.

3.3 Protected habitats and species

We advise that the developer collates relevant information on other protected habitats and species, and presents a preliminary assessment of the potential impacts (including any proposed further survey requirements and/ or mitigation) to the planning authority. This should include a desk study and a reconnaissance visit to the development site by a competent consultant.

An assessment will require:

- a brief description of the site, its context, and the habitats and species present;
- an indication of the site's capacity to support protected species;
- identification of the presence of any protected species, description of any potential impacts and any required mitigation;
- proposals for any further survey and assessment.

The need for further assessment should be determined by the planning authority following the submission of the initial appraisal. Advice on survey effort should be sought well in advance of the planned submission of any application to ensure that sufficient time remains available to carry out any surveys that are necessary.

Information on species survey requirements and legislation can be found [on our website](#). In some circumstances developers should consider adapting our existing guidance for large scale developments. For example see the discussion of adapting bird surveys for small-scale developments in our wind farm [bird survey guidance \(para 2.1.5\)](#). The assessment of existing bird data for the area may be all that is needed. Our guidance on [Assessing impacts to pink-footed and greylag geese from small-scale wind farms in Scotland](#) provides advice on when surveys may need to be done for these species.

We recommend that developers follow the Bat Conservation Trust's [Bat Surveys: Good Practice Guidelines \(3rd edition\) 2016](#), which provides a steer on tailoring bat survey effort to the sensitivity of the site.

3.4 Impacts arising at the construction stage

The construction stage of a small-scale wind development may lead to a number of impacts on the natural heritage, depending on scale and location. It is the planning authority's responsibility to ensure that developers have adequately addressed these risks. To identify potential impacts and possible mitigation the developer should refer to [Good practice during Wind farm Construction](#). In most cases construction effects will be manageable through appropriate design, mitigation and, where necessary, planning conditions.

4. Environmental Impact Assessment (EIA)

The planning authority has a statutory obligation to consider whether or not EIA is required for any wind energy project of more than **two** turbines or for turbines of more than **15m** to hub height. Wind energy developers should approach the planning authority for a formal opinion on whether EIA is required for each project at the earliest opportunity.

The Scottish Government has developed a useful [small-scale wind energy screening checklist](#) to help determine if an EIA is required. We encourage planning authorities to use this (or their own adapted versions). This will ensure that effects on protected areas and protected species are properly considered.

More information on EIA can be found [on our website](#).

5. Contact us

For further information on this guidance contact Kenny Taylor, Scottish Natural Heritage, Strathallan House, Castle Business Park, Stirling FK9 4TZ.

Telephone: 01786 435387. Email: kenny.taylor@snh.gov.uk

Annex 1 – Example SPA connectivity matrix

To help assess connectivity with an SPA a simple matrix can be used. Having identified SPAs within a **20km** search radius using SNHi, these can be listed in column A along with their distance from the proposed scheme. The relevant SPA qualifying interests can then be listed in column B.

Their core foraging ranges (from our guidance on [Assessing Connectivity with Special Protection Areas \(SPAs\) July 2013](#)) can be listed in column C. If the proposal is within the core foraging range of any of the qualifying interests this can be noted in column D, and the potential impact on these can then be explored further. In many cases this will not be significant, but potentially significant effects should be assessed through this process.

A SPA name (and distance from proposal)	B SPA qualifying interests	C Core foraging range	D Is the proposal within the core foraging range for any of the SPA qualifying interests?
X SPA (8km from the proposal)	Whooper swan	5km	No
	Golden eagle	6km	No
	Osprey	10km	Yes

