

Scottish Natural Heritage

Decommissioning and Restoration Plans for wind farms

Guidance

Version 2

February 2016



Introduction

The purpose of this guidance is to develop a common approach to decommissioning and restoration plans (DRPs) for on-shore wind farms. Decommissioning means the removal of turbines and other infrastructure and includes the restoration of the site where required. The guidance also applies to re-powering wind farms which involves the replacement of older turbines with next generation technology. For further information, please refer to our [Commissioned Report 591](#).

We have prepared this guidance before significant decommissioning / repowering takes place in Scotland. We are starting to receive proposals for repowering and anticipate an increase in this type of casework in the next 3-4 years. The advice will be refined and updated as we and the industry gain experience. We are keen to work with the industry to develop good practice to ensure the best outcome is delivered at end of a wind farm's operational life.

The guidance is aimed at a range of people involved in writing, reviewing and implementing decommissioning plans, including developers, ecological consultants and Planning Authorities. It provides advice on the broad principles of planning for decommissioning, and information that should be included in a DRP.

The guidance is focussed on the process of producing a DRP and does not provide detailed advice on methods as each site will have different environmental conditions, as well as different turbine, track and other infrastructure specifications. It is focussed on natural heritage issues and does not provide guidance on matters such as health and safety or the reuse of materials.

Planning permissions granted by Planning Authorities and Section 36 consents granted by the Scottish Ministers will typically contain a condition(s) relating to the decommissioning of a wind farm based on a decommissioning, restoration and aftercare statement. The condition often refers to wind turbines, ancillary equipment and buildings being dismantled and removed from the site and the land being restored and subject to aftercare, in accordance with the restoration and aftercare scheme. This guidance sets out a process to identify an appropriate DRP, which meets the needs of such a condition.

Legislation

Where decommissioning activities are either within, or may affect a Natura site, consideration of the requirements of the [Habitats Regulations](#) will be required. This should be done at the application stage.

The Habitats Regulations Appraisal (HRA) should consider all aspects of the development, (e.g. construction, operation and decommissioning), and decide whether they are likely to have a significant effect on any Natura site¹. If so an appropriate assessment should be undertaken, using the conservation objectives for the site, in order to ascertain whether there will be 'no adverse effect on site integrity' as defined by the Regulations.

Other planning and regulatory requirements may need to be taken into account when drafting and implementing the objectives for a DRP – for example an Environmental Impact Assessment, the Controlled Activities Regulations, Waste Regulations and protected species licensing. It is the developer's responsibility to ensure that all relevant requirements are met and sufficient information provided to support their planning application. Some

¹ Paragraphs 45 and 49 of the [European Court of Justice judgement in case C-127/02 "Waddenzee"](#)

requirements will change during the lifetime of the wind farm and will need to be addressed in the final DRP.

When to prepare a Decommissioning Plan

Decommissioning and restoration of the site should be considered both pre-application and post-consent:

- *Pre-application*

Decommissioning and post-operational restoration should be considered during the initial design phase of the development, ensuring that decommissioning of infrastructure and the restoration of habitats and ecosystems is achievable and practical once the development has ceased operating.

It is good practice to include an outline DRP based on a decommissioning, restoration and aftercare statement in the Environmental Statement or other documents supporting a planning application. However, as there would commonly be 25 years between construction and decommissioning of a wind farm, the outline DRP should be sufficiently flexible. This is because environmental conditions, laws and techniques may change during the lifetime of the development.

If restoration impacts are not being appropriately considered at the application stage, this could be seen as a failure to meet the statutory requirements of the EIA Regulations. An understanding of the impact of restoration proposals on the natural heritage should be described so that any potential mitigation measures can be identified.

Prior to consent it will not be possible to plan for decommissioning in detail. However, the draft DRP should at least consider the main infrastructure on the site and the likely aims of the restoration process.

Consultation with the statutory consultees, including: Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland, Historic Scotland and Scottish Water is recommended at the earliest stages.

- *Post-consent*

The developer should review the DRP at least every 3-5 years throughout the lifetime of the development, and more frequently should the need arise. This is to ensure that site conditions, maintenance requirements and unexpected events do not compromise the objectives of the DRP. For example, unexpected impacts may arise during/following construction that affect the initial objectives of the DRP, or guidance and best practice may have been superseded. Consultation with the statutory bodies should be considered at these review stages, as appropriate.

In the 3-5 years prior to the year of decommissioning, the DRP should be revised, if required, and completed to provide full details of decommissioning. This time period allows full exploration of the options and provides sufficient time for surveys and site investigations to be carried out. The DRP should be submitted to the Planning Authority for approval, in consultation with others as appropriate (e.g. SEPA, SNH).

What should be included in a DRP

The DRP should make use of the most up-to-date guidance and information that is available. It needs to provide sufficient information to inform readers of its purpose and how the objectives will be achieved. The DRP should be written as concisely as possible – focusing on actions/works on-site rather than presenting general contextual information. Our

[commissioned research](#) provides further examples of what should be included (see **Annex A** for a summary table of the key components for consideration).

For wind farm developments, the outline DRP (see **Fig 1**) is likely to be referred to by different people with varying backgrounds and interests over the 25 year lifetime of the wind farm. Some readers will have little or no prior knowledge of the site or development so sufficient background information will be required. As well as informing new readers, this will facilitate compliance checking by the Planning Authority during decommissioning.

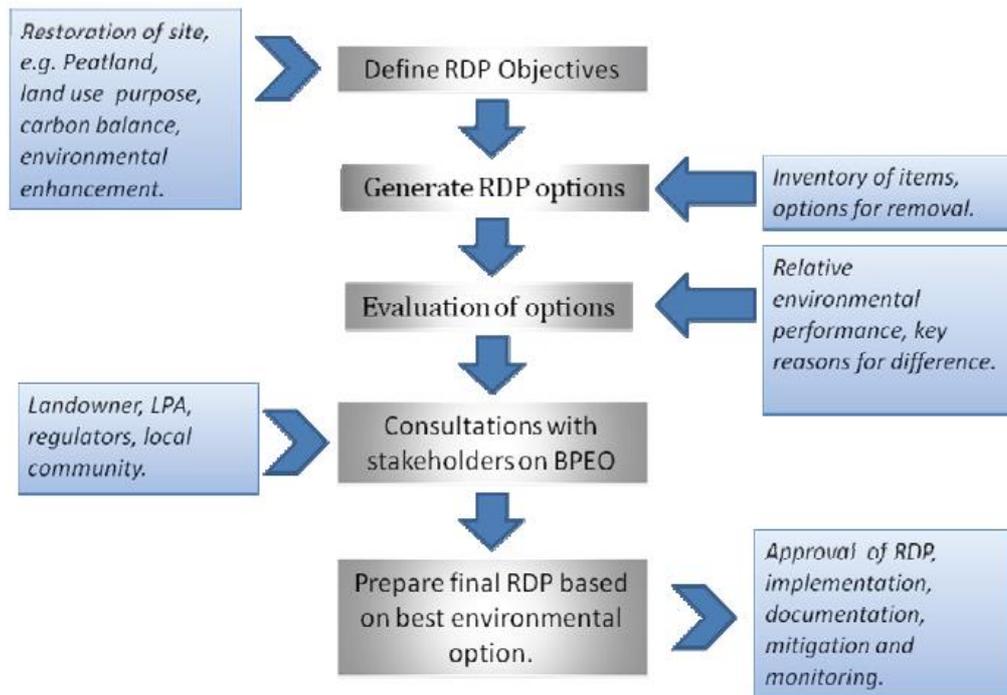


Figure 1 - Framework for Decommissioning Plan (as per Fig 17 of Commissioned Report 591. Note - RDP and DRP refer to the same thing).

The aim of the DRP should be to return the site to the same or better state than pre-construction. Key things to include in a DRP are:

- *The reason for the DRP*
Usually a DRP will be required as a condition of planning. The wording of the planning condition should be stated in the DRP to make it absolutely clear to future readers why the DRP exists and whether there are any requirements in the condition which are specific to the site.
- *The aims of the DRP*
The DRP should specifically state what it is trying to achieve (e.g. the removal of the wind farm; the level of associated infrastructure removal; the restoration of the site to peatland or the original land use). This will allow compliance monitoring during the decommissioning and restoration period to be conducted effectively.
The DRP should complement other plans and activities affecting the development site (for example Habitat Management Plans).
- *The way the site will be decommissioned and restored*
The DRP should provide an appropriate level of detail about how the site infrastructure will be removed, and how the site will be restored so that it meets the objectives of the DRP.

As a guide, the final DRP should contain a similar level of detail to a Construction and Environmental Management Plan. It will need to be informed by contemporary habitat and protected species surveys, and other information on potential constraints (e.g. watercourses, deep peat, or sensitive areas restored during the lifetime of the development). It should include all relevant information, maps and figures. This is to ensure that future readers can understand what it is seeking to achieve, why, where, how and when.

If reference is made to figures or maps contained in an Environmental Statement or planning application, copies of these should be included in the DRP. The area covered by the DRP (using appropriately scaled maps) should be clearly defined.

- *Reviewing and reporting*

The DRP should include a short section indicating that it is a live document that may be altered in agreement with the planning authority, SNH and/or other regulatory body during the operational lifetime of the development. It should specify the timetable for interim reviews and finalising the plan. If reports are likely to be required as a result of the reviews, the DRP should specify how often and when reports will be produced, for whom, and how any further action required will be delivered. A table of revisions should be included for future readers. Where significant alterations to the draft DRP are likely to be necessary, the developer should seek advice from the Planning Authority as soon as possible (who may consult us and other agencies when appropriate).

The role of SNH

Our engagement in DRPs and the advice we can offer will relate to the:

- sensitivity of the site; mitigation of impacts on the natural heritage; and
- opportunities for habitat restoration/enhancement.

The developer and/or their advisors should take the lead role in identifying effective decommissioning methods and opportunities. We will usually only engage with a DRP where it is required to mitigate significant adverse impacts on natural heritage interests as set out in our [Service Statement](#). In most other cases, we would expect the developer and Planning Authority to agree and implement the DRP without reference to SNH.

Further advice

There is relatively little experience in the UK of decommissioning and repowering wind farms. We therefore encourage everyone involved in decommissioning to capture and share any lessons learnt as more wind farms are decommissioned over the coming years. We have also published a range of guidance on surveys, wind farm construction and post-construction monitoring that may also be of use for DRPs. This is available on our [website](#).

Developers may also find the [Constructed tracks in the Scottish Uplands](#) guidance useful.

Contacts

For further information and enquiries please contact: Kenny Taylor
01786 435 387
kenny.taylor@snh.gov.uk

Annex A – Key decommissioning / repowering components

Key Element	Components	Constituents
Turbines	i. Blades	Resin / fibre glass
	ii. Blade hub and nose cone	Cast iron / resin / fibre glass
	iii. Nacelle / Gear Box	Iron / steel / copper / resin / silica
	iv. Tower	Steel (sections)
Turbine Base	i. Backfill above and around base.	Suitable engineering fill / crushed rock
	ii. Concrete Bases	Concrete / steel reinforcement
	iii. Concrete Piles	Concrete / steel reinforcement and casing
Transformer	i. Transformer	Electrical components
	ii. Concrete Base	Concrete / steel reinforcement
Crane Pad	i. Hardstanding	Crushed rock / geogrid reinforcement. Weathered and possibly vegetated
	ii. Soils	In-situ soils
Tracks	i. Forestry Spec Roads (granular fill) (also floating roads)	Crushed rock / possibly geotextile separators / geogrids on weaker ground
	ii. Bituminous/ Asphaltic Roads	Bitmac/tarmac/bitumen/ Type 1
Buildings	i. Control Building / Staff Building	Timber / brick / prefabricated panels / glass / steel / concrete Buried and O/H Services.
Substation	i. Switchgear / Cabling	Switchgear / Cabling Other miscellaneous – fencing / lighting etc
	ii. Hardstanding	Compacted granular material / concrete plinths
Cables	i. Cables	Copper / Aluminium / Fibre optic / plastic and rubber sheaths

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