



EIA: Supplementary Environmental Information

Sandy Knowe Wind Farm Extension

SEI Chapter 5: Landscape Planting Principles
and Biodiversity Enhancements

Sandy Knowe Wind Farm Limited



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This report also is supported by the following Figures associated with the SEI:

SEI Figure 3-3 Drain Blocking Proposals

This report also is supported by the following Figures associated with the 2022 EIA:

Figure 14-2-1: Habitat Management Plan

Appendices

This report also is supported by the following Appendices associated with the 2022 EIA:

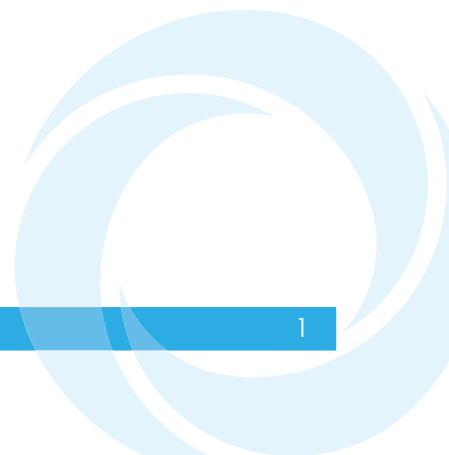
Technical Appendix 14-2 Outline Habitat Management Plan (OHMP)

Glossary of Terms

Term	Definition
The Applicant	Sandy Knowe Wind Farm Limited
The Agent	ERG Holding UK Limited
Environmental Advisors and Planning Consultants	Atmos Consulting Limited
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of carrying out, in a systematic way, an assessment of the likely significant environmental effects from a development.
Environmental Impact Assessment Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations)
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations
The Proposed Development	The Sandy Knowe Wind Farm Extension
The Proposed Development Footprint	The area within which the Proposed Development will be located
The Proposed Development Site	The full application boundary including Sandy Knowe Wind Farm and Sandy Knowe Wind Farm Extension

List of Abbreviations

Abbreviation	Description
DGC	Dumfries and Galloway Council
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
NTS	Non-Technical Summary
OBPRP	Outline Borrow Pit Restoration Plan
PMP	Peat Management Plan
SEI	Supplementary Environmental Information



5 Landscape Planting Principles and Biodiversity Enhancements

5.1 Introduction

As indicated in SEI Chapter 1 Introduction, this chapter considers a set of Landscape Planting Principles and Biodiversity Enhancements for Sandy Knowe Wind Farm Extension (the Proposed Development).

The Landscaping Planting Principles detailed in Section 6.2 have been compiled by the chartered Landscape Architects (Chartered Members of the Landscape Institute (CMLI)) at LUC who carried out the Landscape and Visual Impact Assessment (LVIA) for the EIA of the Proposed Development. LUC have extensive experience in the assessment of landscape and visual effects of wind energy developments.

The Biodiversity Enhancements detailed in Section 6.3 have been authored by the ecological consultants at Atmos Consulting Ltd that carried out the ecological assessments detailed within the EIA for the Proposed Development. The ecological team is led by Stephen McNee who is an Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM) with 12 years' experience as an ecological consultant.

5.2 Landscape Planting Principles

5.2.1 Landscape Objective A: New Native Woodland

It is proposed that new areas of native woodland will be introduced across open parts of the Site, outside of the turbine areas and within areas which have been identified for new habitat for Black Grouse.

The aim of this intervention is to enhance the biodiversity and improve habitat connectivity by introducing and linking semi-natural wildlife areas in the interface between commercial plantation and existing and enhanced riparian corridors.

This will help to create suitable habitats for sheltering and foraging resources for a range of small mammal, avian (including Black Grouse) and invertebrate species. Native woodland and fringe woodland planting will also have positive benefits in terms of the landscape and visual resource, improving visual amenity and breaking up views of the open hillside, within which the turbines are proposed.

The proposed native woodland planting will use a larger number of young transplants and whips, as opposed to a smaller number of larger specimen trees. This type of woodland planting is likely to have a better chance of successful establishment, and to grow with a more natural looking form. Planting will be arranged in small single species groups (say 10-15 plants of any one species grouped together), forming irregular clumps with natural scalloped edges and glades (openings left between clumps of trees), as opposed to following a more rigid grid pattern. This will give the woodland a more natural appearance as it establishes, and will ensure increased diversity, with the glades providing opportunity for the development of wildflower and other habitats required to support Black Grouse.

Where native woodland is proposed, planting will comprise a combination of native shrub and tree planting. Planting of native species will be of local provenance, and appropriate to the conditions at the Site. The detail of the proposed areas of new native woodland planting and species composition will be agreed post-consent with DGC. Typical plant spacing at the time of planting will be 2m for shrubs and 3m for tree species. New areas of native woodland will be fenced off, to allow establishment. If tree shelters or protection are also used, then they will be removed after 3-5 years and disposed of to a licenced tip. No plastic tree tubes or rabbit proof fencing/netting will remain on Site in the long term. Plants will be thinned, or coppiced where appropriate (in the case of hazel) on a rotational basis, in winter, every 3-5 years, with the first round of thinning being after 5 years. The species mix will include those most suited to for Black Grouse.

5.2.2 Landscape Objective B: Riparian Habitat

It is proposed that riparian shrub/ woodland planting is undertaken along the Polhote Burn valley, in the Sandy Knowe Extension Site (and outside of the SSSI designation). This planting will increase the area of riparian woodland, by introducing native broadleaved trees/shrub planting, separated by glades of open space.

The aim of this intervention is to enhance the biodiversity of the riparian corridors along the Polhote Burn, and associated smaller tributaries, within the Proposed Development Site. This will also have positive effects on the landscape and visual resource of the Site in terms of its landscape and visual amenity, enhancing the riparian river corridor in certain areas, and giving it a more 'natural' character and appearance. The riparian planting will be promoted in areas along the Polhote Burn where mature planting will not interfere with the proposed turbines and water crossings used for farming can be maintained.

Extending the riparian corridor will provide increased diversity and connectivity of habitats within the Site and improve habitat connections to the wider landscape. This intervention will also improve the flow characteristics of watercourses by directly intercepting rainfall (increased infiltration characteristics) and will improve bank stability, slowing rates of erosion and thus helping to maintain water quality. Providing dappled shade will aid in cooling watercourses during summer temperature peaks, thus aid in providing climate resilience for fish species vulnerable to high summer water temperatures. At the same time, ensuring there are open areas left between woodland clumps will enable some sunlight to reach the water and promote the establishment of a mosaic of wildflower rich glades across waterside wetlands.

This resource will also provide additional food sources for a range of avian and mammal species in the spring and winter, together with suitable sheltering opportunities. Riparian planting will aim to establish small groups of native trees/ shrubs along the riparian corridor of the Polhote Burn. These will act as seed banks to encourage natural regeneration across a wider area. Species such as alder and goat willow, which favour wetter conditions are likely to be most suitable. Best practice guidance for riparian planting will be followed (The Woodland Trust, 2016) with planting groups expected to be 5-10 m wide and 10-20 m long, depending on the width of the watercourse, speed of flow, and extent of habitat considered to be suitable for planting.

Planting will comprise a combination of native shrub and tree planting. Planting of native species will be of local provenance appropriate to the conditions at the Site. The

proposed areas of new riparian habitat and the species composition will be agreed post-consent. As elsewhere, thinning and coppicing (in the case of goat willow) will be undertaken to ensure plants reach their full potential and do not become dense and overcrowded, with this process beginning after 5 years. The species mix will consist of those species which are most suited to Riparian Habitat.

For all new planting, and during the establishment phase, trees will be protected in accordance with best practice guidance available at the time of planting. These protective measures are to be detailed further and confirmed post-consent with DGC. This may include tree tubes and shelters, and rabbit or deer fencing if required.

Planting will be undertaken using established forestry practices, through pit, slit or T notch planting, to minimise disturbance to the ground. Where the ground is very wet then this should either be left as a glade, or a turf should be cut on three sides and folded back, and the plant planted into the dryer raised mound this creates. Heavy machinery (tractors/bulldozers) should not be used to facilitate planting or any fencing that may be required, as this will damage and compact the ground, reducing the chance of successful establishment.

Monitoring will be undertaken regularly to ensure planting is successful, and protective measures are in working order. Any necessary repairs to these protective measures should be carried out in good time to avoid damage to planting. Protective measures will be removed after a period of five years to ensure that plastic and man-made materials are not left on the Site in perpetuity.

5.2.3 Landscape Objective C: Peatland Habitat

It is proposed that planting in line with EIA Volume 2 Technical Appendix 14-2 Outline Habitat Management Plan (OHMP) and proposed peat restoration identified in SEI Chapter 3 Revised Peat Management Plan (PMP) and SEI Chapter 4 Outline Borrow Pit Restoration Plan (OBPRP) is carried out on the Proposed Development Site.

The areas identified for peatland restoration are illustrated on SEI Figure 3-3 as follows:

- the Western section of the Proposed Development Site on land to the West of turbines T25 to T28 (inclusive); and
- the Eastern section of the Proposed Development Site, on the land surrounding T29 and T30 .

As shown in the 2022 EIA Figure 14-2-1 Habitat Management Plan, Habitat Management Areas (HMAs) have been identified to encourage the presence of black grouse. Native species planting in these areas will form a natural edge to the restored peatland creating a habitat mosaic ideally suited to the establishment of black grouse. These areas will also improve the local landscape (and visual) amenity of the Site, creating areas of restored peatland and new scrub which will provide a contrast to wider areas of pastoral farmland and coniferous forest found across the Site.

An outdoor education trail, as discussed in SEI Chapter 6 Other Considerations, will follow the track connecting the existing walking trail (SEI Figure 6-2) to the proposed new access tracks for the Proposed Development, connecting to T30. The associated works remain within 10m of the existing track therefore there will be no additional habitat loss to that already detailed within the 2022 EIA.

5.3 Biodiversity Enhancements

The underlying principles of the EIA Volume 2 Technical Appendix 14-2 OHMP will be utilised to enhance the overall biodiversity of the Proposed Development Site.

These enhancements will be carried out by focusing on both the HMAs (2022 EIA Figure 14-2-1 Habitat Management Plan) and the areas identified for peatland restoration as detailed in SEI Chapter 3 Revised PMP and SEI Chapter 4 OBPRP.

The following objectives designed specifically to increase overall biodiversity on Site and are expected to lead to the following outcomes:

- Improvement of habitat desirability for Black grouse through habitat management and restructuring, while increasing floristic species diversity; and
- Protection and enhancement of blanket bog and Ground Water Dependant Terrestrial Ecosystem (GWDTE) habitats.

5.3.1 Create new habitats for black grouse

Black grouse typically prefer habitats transitional between forest and open heath, marginal cultivation, bog, or fen. The areas which will be improved are shown in the 2022 EIA Figure 14-2-1 Habitat Management Plan.

The establishment of woodland and heath will enhance the biodiversity of the Site by creating habitat for Black grouse. Establishment of these HMAs, which are adjacent to a diversity of habitats, including grassland will help increase habitats for a variety of invertebrate prey on which young Black grouse feed.

To help maintain and increase habitats on Site for Black grouse, the following principles will be followed:

- Management of the graminoid component to reduce the height and dominance and allow a shift towards more ericoid and bryophyte species resulting in a balanced habitat with a mix of species. This can be achieved by a combination of mechanical strimming and an increased level of grazing;
- Management of the dense heather sward to encourage more variation in age and structure of the ericoid cover. This could be achieved by mechanical strimming or using hand-held tools such as a panga or similar. (The use of a panga or similar is recommended as this could create a more natural appearance of the heather sward and would minimise potential damage to the ground by avoiding the use of tracked / wheeled machinery);
- Where appropriate, selective planting of some broad-leaved tree and shrub species of a variety of ages to improve species and structural diversity of the woodland edge habitat; and
- Limited felling along the edges of the surrounding conifer plantation to create variations in age and structure.
- Removing fencing across the Site, which could act as a barrier to grouse movement and create a collision risk, will help increase their numbers on Site. Where continued use of fencing is considered essential, new and existing fences will be marked (where appropriate) according to current best practice.

5.3.2 Protect and ensure maintenance of groundwater supply to GWDTE

GWDTE can be directly or indirectly impacted by construction activities. Identifying, protecting and maintaining these areas can have both direct and indirect benefits in increasing biodiversity on Site by creating a variety of habitats which benefit several invertebrate and bird species. This can be accomplished by:

- Minimising dewatering activities within the turbine areas across the Site;
- Installation of permeable layers in track bases;
- Cross drains under track at regular intervals; and
- A micro-siting margin to allow for adjustment of infrastructure positions to suit actual ground conditions is proposed within 100m of sensitive habitats.

5.3.3 Peatland Restoration/Ditch Blocking, where appropriate

Biodiversity can further be increased by implementing peatland restoration as detailed in SEI Chapter 3 Revised PMP and SEI Chapter 4 OBPRP.

By retaining water within the drains on Site, this will in turn allow re-wetting of the vegetation, which in turn will encourage the growth of Sphagnum moss. This will be carried out in the areas identified in SEI Figure 3-3.

The growth of Sphagnum will in turn aid in raising the water table and return or enhance the habitat to active blanket bog. This should also increase the suitability of the habitat for invertebrates, thereby benefitting breeding birds such as Black grouse which feed their chicks primarily on invertebrates.

Ditch blocking will be implemented in the areas identified in SEI Figure 3-3 to raise and stabilise the water table year-round, thus reducing the amount of artificial drainage and allowing peat restoration to occur.

5.4 References

The Woodland Trust (2016) Keeping Rivers Cool: A Guidance Manual. Creating riparian shade for climate change adaptation. Available at: <https://www.woodlandtrust.org.uk/media/1761/keeping-rivers-cool.pdf> [Accessed 06/06/2023]

