

PROPOSED DEVELOPMENT OF A RENEWABLE ENERGY PLANT AT SLEAFORD, LINCOLNSHIRE

Ecological Mitigation Plan

1 Mitigation requirements

The aim of mitigation works is to minimise the ecological impact of the development, wherever possible avoiding any impact on ecological interest features during the construction and operation of the renewable energy plant. Compensation measures are also necessary where interest features will be unavoidably impacted by the development; enhancement measures are also proposed in order to create new wildlife habitats.

Mitigation works will be required to address construction-phase impacts on the following interest features identified in the Environmental Statement:

- Breeding birds;
- Ash tree in southern boundary hedgerow (possible bat interest);
- Birch Wood SNCI; and
- Ditches draining the site.

Compensation works will be necessary to:

- offset hedgerow loss, and
- create suitable foraging habitat for bats, and avoid negative impacts on bats during the operation of the development.

Enhancement measures will create new wetland, grassland and scrub habitats; target BAP priority species expected to utilise the development include reed bunting and linnet.

2 Mitigation plan during construction

2.1 Avoidance of impacts on breeding birds

In order to avoid impacts on breeding birds, site and vegetation clearance works should take place between August and February, outside the March – July bird breeding season.

Further works to any large areas of open ground, trees, shrubs or dense vegetation which need to take place outside this period should be preceded by a search to detect nests or signs of breeding by an experienced ecologist. Works should only proceed if it is confirmed that there are no breeding birds; for this reason it is highly recommended to ensure all such works are completed within the appropriate season.

2.2 Avoidance of impacts on bat roosts

A mature ash tree in the southern hedgerow has already been surveyed for bats, and is not thought to support a roost. However, to ensure that there is no impact on bats, an evening inspection should be carried out immediately prior to felling. The following day, the tree should be 'soft-felled' in sections, lowering each cut section to the ground. A licensed bat handler should be in attendance during this operation to inspect cut sections.

The optimum timing for this operation is August; if it is necessary to carry this out earlier, a preliminary inspection for bird breeding activity will be necessary.

2.3 Avoidance of impacts on Birch Wood SNCI

Birch Wood lies outside the development footprint, and there is no reason to access it during the construction phase of the development. However, it is necessary to avoid impacts on trees and shrubs at the western margin of the wood which may arise from excessive compaction within their rooting zone by storage of soil bunds or materials during construction. It is also necessary to avoid damage to the marginal trees from vehicle movements affecting branches, and from movement of soil affecting their rooting zone.

A temporary fence should be constructed at the maximum distance from the wood where no construction operations are necessary, and maintained intact during the course of construction. Contractors and sub-contractors should be instructed of the need to avoid breaching the fence, or storing soils or materials within or adjacent to the wood.

2.4 Avoidance of impacts on ditches

The main risk of impacts on drainage ditches is from pollution arising from stored fuel or other liquids, and as a consequence of leakage from vehicles. This will be dealt with in the environmental management plan for the construction site, and will involve appropriate bunding around vehicle parking and fuel storage areas to control any spillages.

The surface water treatment system (positive drainage with an oil interceptor) for the development will be installed and operational as an early priority, minimising the risk of any off-site impacts arising from site drainage.

3 Mitigation measures post-construction

3.1 Measures to offset hedgerow loss

The site landscape design will incorporate linear scrub features utilising a similar mix of species to that which occurs in the local hedgerows, ideally sourced from local provenance plant material. A suitable palette of species will include the following species:

Species	English name
<i>Acer campestre</i>	Field maple
<i>Cornus sanguinea</i>	Dogwood
<i>Corylus avellana</i>	Hazel
<i>Crataegus laevigata</i>	Midland hawthorn
<i>Crataegus monogyna</i>	Hawthorn
<i>Euonymus europaeus</i>	Spindle
<i>Fraxinus excelsior</i>	Ash
<i>Ligustrum vulgare</i>	Wild privet
<i>Prunus spinosa</i>	Blackthorn
<i>Rosa canina</i>	Dog rose
<i>Rosa rubiginosa</i>	Sweet briar
<i>Salix cinerea</i> ssp. <i>cinerea</i>	Grey sallow (East Anglian sub-species)
<i>Sambucus nigra</i>	Elder

The aim with the planting design should be to create a belt of scrub and young woodland to the south of the plant, which links Birch Wood with the remaining roadside hedge to the west of the development. As this matures, it will compensate for the loss of the roadside hedge, providing a habitat for foraging bats, and will also extend the available scrub / hedgerow habitats for breeding birds.

The new scrub and woodland habitats will be planted as soon as possible (within the November – March planting season), into fertile former agricultural soils. Intensive establishment maintenance methods will seek to maintain a weed-free environment around shrubs and trees, in order to promote optimal growth rates, ensuring they make an early contribution to site biodiversity.

3.2 Measures to create suitable bat foraging habitat

Two measures will seek to optimise the new site's value for foraging bats:

- Ensuring the landscape design creates linear scrub / plantation features which maximise connectivity and edge habitats; and
- Ensuring the design and operation of lighting does not affect those bat species which may be adversely affected.

Landscape design

The disposition of tree and shrub planting is shown on the Landscape Proposals & Boundary Treatment Plan (drawing reference: 552-01-01), and shows a linear bund with planting around three sides of the development. This links from the woodland to the east to the remaining section of roadside hedgerow to the west, making an attractive foraging corridor for bats. Attenuation basins for surface water run-off further enhance the value of this area for bats, especially if they retain water long enough to hold wetland vegetation.

Lighting design

The most recent research on the effect of bats and lighting suggests that lights have a positive impact on the foraging of some species (notably pipistrelle) by attracting their insect prey, but negatively affect higher-flying species (such as noctule) which are affected by upward light spillage.

To avoid negative impacts (and as described within Section 4.0 of the ES), there will be no high-level building-mounted lights, and the lighting between staff areas will be low-level downlighters to minimise light spillage. There will be full external lighting, but this will be used during vehicle deliveries only. The timing of lighting use is such that the full external lighting is unlikely to be lit during the bat activity season.

4 Ecological enhancement measures

4.1 Wetland habitat creation

New wetlands will be created in the form of a series of flood attenuation ponds, and linking open surface water ditches.

The ponds will be located in an area of species-rich grassland (see below), and will be designed to retain a damp base which is suitable for the development of fen vegetation. Open ditches are likely to hold water and will provide a further habitat for fen vegetation.

The surrounding ditches provide a template for suitable species, which will effectively form an inundation community of short grasses and herbs, with some tall-herb fen species.

4.2 Species-rich grassland

Species-rich grassland should be developed on sub-soil from the current agricultural field, concentrating the use of nutrient-rich topsoil in tree and shrub planting bunds.

A precise specification should be devised following analysis of soil properties, but should ideally attempt to replicate a calcareous grassland plant community.

5 Management and aftercare

5.1 Management and aftercare of the landscape and ecological enhancement measures will be essential to fulfil the nature conservation objections. As a consequence it is proposed that the site be the subject of a Landscape and Ecological Management Plan. The production and agreement of the scope of this document should be controlled through a suitably worded planning condition.