THREE OAKS RENEWABLE ENERGY PARK, EAST YORKSHIRE: LANDSCAPE AND BIODIVERSITY MITIGATION AND ENHANCEMENT PLAN

Report to Ridge Clean Energy

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THREE OAKS RENEWABLE ENERGY PARK, EAST YORKSHIRE: LANDSCAPE AND BIODIVERSITY MITIGATION AND ENHANCEMENT PLAN

Introduction

1. The purpose of this document is to describe the Landscape and Biodiversity Mitigation and Enhancement Plan (LBMEP) for the site and how it will be delivered. It is intended that this LBMEP and the agreed mitigation will be secured via an appropriate condition attached to any future planning permission.
2. This plan has been produced followed discussion with the landscape architect and incorporates mitigation proposed in the landscape and visual impact assessment report.
3. The following habitat enhancement measures are proposed, the below measures should be read alongside Figure 1, which provides a visual representation:
    - **Restoration of lowland wildflower meadow** – the large majority of the site is currently arable farmland of low diversity and low ecological value. This grassland will be managed after the construction of the Renewable Energy Park to establish a diverse wildflower meadow plant community. The target will be to enhance 64.2ha of arable farmland to a more biodiverse neutral grassland.
    - **Native hedgerow new planting and restoration** – 800m of new native hedgerow will be planted along the northern and eastern boundary of the site and a further 1,300m of hedgerow restored (planting up gaps and increasing species diversity).
    - **Ground-nesting bird plot** - provision of 0.3ha. of grassland through the central part of the site where no solar panels would be located (for ground-nesting birds including lapwing, quail, skylark, yellow wagtail and corn bunting).
    - **Fence design/management** - to avoid barriers to mammal movement (including brown hare, badger and hedgehog).
    - **Bird and bat box provision** – to provide enhanced nesting/roosting opportunities
4. Additionally, a **Breeding Bird and Protected Species Protection Plan** will be implemented during construction (see Appendix 1 of this report).

Baseline Ecological Conditions

5. The site is located approximately 1km north of Thornholme village and 5km west-south-west from Bridlington in East Yorkshire. It is predominantly open arable farmland and lies within the 'Yorkshire Wolds' NE Natural Area.
6. Key Ecological Receptors that could potentially be affected by the Renewable Energy Park (and hence are considerations within this Plan) comprise:
    - Ground-nesting farmland birds including **quail**, **grey partridge, lapwing, skylark, yellow wagtail** and **corn bunting**.
    - Other farmland breeding birds - **dunnock, song thrush, linnet, yellowhammer**, and **reed bunting**.
    - Resident mammals – **brown hare**, **hedgehog**, **badger**, **bats** are all present at the site, though the effects of the Renewable Energy Park on these species are likely to be

generally positive (through the habitat improvements resulting from the implementation of this Plan).

Ecological Impacts of the Proposed Renewable Energy Park

7. The Renewable Energy Park has the potential to cause a range of ecological impacts including:
   - Habitat loss during construction.
   - Pollution from noise, vibration, dust, surface water run-off during construction.
   - Disturbance/harm during construction.
   - Change in habitat during operational phase (dependent on the management of the site after construction).
   - Disturbance during operation (if species are displaced as a result of the presence of the solar panels).
8. The solar panels and associated infrastructure would all be located on land that is currently agriculturally improved grassland. The panels will cover approximately 22ha. of the 66ha total land within the site. With the solar panels raised above the ground, the land take would typically be only about 5% of the site (BRE 2014[1]).
9. There would be 1.97km (0.79ha) of new access track, a loss of 0.76ha. for the substation/battery storage and 0.01ha. for the six transformers. All of this loss would be of arable farmland and would be egrmporary – it will be restored after the 40-year lifespan of the Renewable Energy Park. There would be no new watercourse crossings.
10. Most of the adverse effects on key ecological receptors have been largely avoided in the design of the scheme through buffering of more sensitive habitat including the hedgerows and trees. There would however be some residual loss of hedgerow (65m, 60m of which would be restored following construction), and also loss of open ground habitat in areas where the solar panels would be located (22ha. would be taken up by the solar panels). This is particularly likely to affect ground-nesting birds that prefer open habitats such as lapwing.

Landscape and Biodiversity Mitigation and Enhancement Plan: Objectives

Construction Phase

11. The aims of the LBMEP during the construction phase of the development are as follows:
   - To ensure that the development is constructed and commissioned without any significant adverse ecological effects (and ensure compliance with the nature conservation legislation), through the implementation of a Breeding Bird and Protected species Protection Plan (see Appendix 1).
   - To restore and enhance habitats within the site to deliver a net biodiversity gain, including restoration of 64ha of wildflower meadow within the solar panel area of the site, planting

[1] BRE (2014) Biodiversity Guidance for Solar Developments. Eds G E Parker and L Greene.

of 0.8km of new native species-rich hedgerow with 1.5km of native tree planting and a further 1.3km of hedgerow restoration.

Operational Phase

12. The aims of the LBMEP during the operational phase of the development are as follows:

- To manage the restored/enhanced habitat to ensure that they continue to deliver a net biodiversity gain through the lifetime of the Renewable Energy Park.
- To provide ongoing management for these habitats to be able to accommodate key species.
- To monitor the habitat to ensure that the LBMEP objectives and being met, or if not, then to inform any management changes that are necessary to achieve them.

13. These measures would be sympathetic to and would enhance the character, quality and biodiversity of the site and surrounding landscapes, would be visually attractive and would add to the overall quality of the area over the lifetime of the development (in accordance with the National Planning Policy Framework). They would enhance the ability of this landscape to accommodate the type and scale of energy development proposed.

14. They would have regard to the specific characteristics of the site's wider context and the character of the surrounding area, would provide soft landscaping and boundary treatment of appropriate scale and size and would help to protect the amenity of existing properties in the wider area.

Management Prescriptions

Species-rich grassland

15. The arable farmland within the whole of the Renewable Energy Park will be restored to a diverse wildflower meadow (see Figure 1: Target Note 7, shaded orange), which shows the extent of the new species-rich grassland). There are several options available to establish the wildflower meadow, informed by Natural England guidance (Technical Notes 062-068):

- Sowing with wildflowers/grass seed.
- Slot seeding with wildflower/grass seed.
- Spreading species-rich green hay – usually considered best as an option for lower soil fertility but could be useful at this location to encourage establishment of key species.

16. As recommended by the East Riding of Yorkshire Council (ERYC) Nature Conservation Team, the aim would be to create a diverse meadow across the site, with a mosaic of habitats to benefit a range of flora and fauna. The approach would be to select a commercially available and locally grown meadow seed mix with a range of species that would suit the varying microclimates across the site (due to variations in shade, soils and soil moisture) and allow the meadow to develop into a mosaic of habitats to suit the varying microclimates.

17. This planting and seeding would be undertaken in the first available planting and seeding seasons following the end of the construction phase.

18. It is initially proposed that management of the grassland should be carried out primarily by grazing stock (sheep). Levels of grazing will be varied through the year to optimise the wildflower meadow diversity, adopting the following regime (though to be refined as the restored grassland becomes established, informed by the monitoring programme):

- No grazing March-June.

- Heavier grazing (5-10 sheep per ha) July – October, after the flowers have set seed, to ensure the continuance of the component species.
- Grazing continued at a lower level (3-5 sheep/ha) through the winter (October – February) unless ground conditions too wet (in which case no grazing over-winter).

19. If grazing with sheep is not possible, then an alternative cutting regime would be implemented to achieve a similar effect on the vegetation, with a single cut per year, in August/September.

20. New grassland strips to the north and east of the compound will be kept free of solar panels to provide habitat for species that prefer open ground (and hence may be deterred from nesting within the solar panels) (Figure 1: Target Note 8).

Hedgerow Planting

21. A total length of 800m of new native hedgerow will be planted within the site (see Figure 1). An additional 1.3km of currently gappy hedgerow will be restored through further planting. This will include:
    - New field boundary hedgerows with hedgerow trees around the northern, eastern and part of the southern boundary of the site (Figure 1: Target Note 1 and 3).
    - New hedgerow planting to replace the short lengths of hedgerow removed along the western boundary for the site entrance and passing places (Figure 1: Target Note 4).
    - New hedgerow planting with hedgerow trees to gap up the existing hedgerow along the Parish boundary through the centre of the site (Figure 1: Target Note 5).

22. In accordance with recommendations from the ERYC Nature Conservation Team, the new hedgerow planting would use the following mix of native species typical of the Yorkshire Wolds National Character Area (no 27): hawthorn *Crataegus monogyna* (30%), blackthorn *Prunus spinosa* (30%), field maple A*cer campestre* (10%), hazel *Corylus avellana* (15%), dogwood *Cornus sanguinea* (5%), crab apple *Malus sylvestri*s (5%) and buckthorn *Rhamnus cathartica* (5%).

23. With regard to ongoing management, this will maximise the hedgerow wildlife value and also their amenity (screening) and aesthetic value. The hedgerows will be trimmed annually (between January and February) in the first three years after planting to encourage bush growth. Thereafter it will be trimmed once every three years. A target 3m height will be maintained through the lifetime of the Renewable Energy Park. This same management regime will also be applied to the existing hedgerows along the western and part of the southern boundary (Figure 1: Target Note 6). As well as biodiversity benefits, this will also deliver landscape benefits through better screening of the development (as referred to in the LVIA).

Tree Planting

24. A new shelterbelt of trees will be planted to the north of the site, alongside Woldgate (Figure 1: Target Note 1) and within the site alongside the substation compound to help screen the substation and battery storage compound (Figure 1: Target Note 2).

25. New tree planting would be carried out around the substation and BESS compound (Figure 1: Target Note 2).

26. Trees (of the same species mix) will additionally be planted within the new hedgerow planting to gap up the existing hedgerow along the Parish boundary through the centre of the site (Figure 1: Target Note 5).

27. This tree planting will be native tree species commonly found in the field boundary hedgerows in the wider area, including Oak *Quercus robur*, Beech *Fagus sylvaticus*, Hawthorn *Crataegus*

monogyna, Hazel *Corylus avellana*, Crab Apple *Malus sylvestris* and Field Maple A*cer campestre*.

Additional Measures

28. A range of bird and bat boxes will be installed to improve the availability of nesting and roosting resources, all to be manufactured from high quality long-lasting material such as 'Woodcrete'. This will include:

    - Barn owl box – one to be erected at a secure location within the site (specific location confidential to avoid disturbance to this species which is specially protected from disturbance under Schedule 1 of the 1981 Wildlife and Countryside Act).
    - Songbird nest boxes – 20 boxes of mixed type (5 x small hole for tits, 5 x larger hole for sparrows, 5 x larger boxes for starlings and 5 x open-fronted boxes for flycatchers/robins/thrushes). These will be erected within woodland patches and on trees within the existing hedgerows/field boundaries.
    - Bat boxes – 10 boxes – same locations as songbird nest boxes.

29. Measures will be implemented to ensure that mammal access routes across the site are not impeded by site fences. This will be achieved by either leaving a minimum gap of 20cm between the ground and the fence, cutting gaps at the bottom of fences to allow passage through, or installation of mammal 'gates'.

Monitoring

30. In order to ensure that the LBMEP is delivering its objectives and that a net gain is being achieved, an ecological monitoring programme will be implemented. This will include an annual visit to assess the site's habitat condition, in years 1-3, 5 of operation, and then at five-year intervals for the lifetime of the development. During each visit the condition of the site's habitats will be assessed, and recommendations made to fine-tune the future management of the site.

31. Additionally, breeding bird surveys will be carried out to inform the implementation of the LBMEP. Surveys will follow the same methodology as the baseline surveys carried out in 2020 and 2022 (so they will be directly comparable) and will be undertaken during the first three years of the operation of the Renewable Energy Park. After that the results will be reviewed and the surveys discontinued as long as the LBMEP has delivered the required net gain to the local breeding bird population. If not then measures to improve the site's management will be recommended and the surveys continued in years 5, 10 and 15.

APPENDIX 1. BREEDING BIRD AND PROTECTED SPECIES PROTECTION PLAN

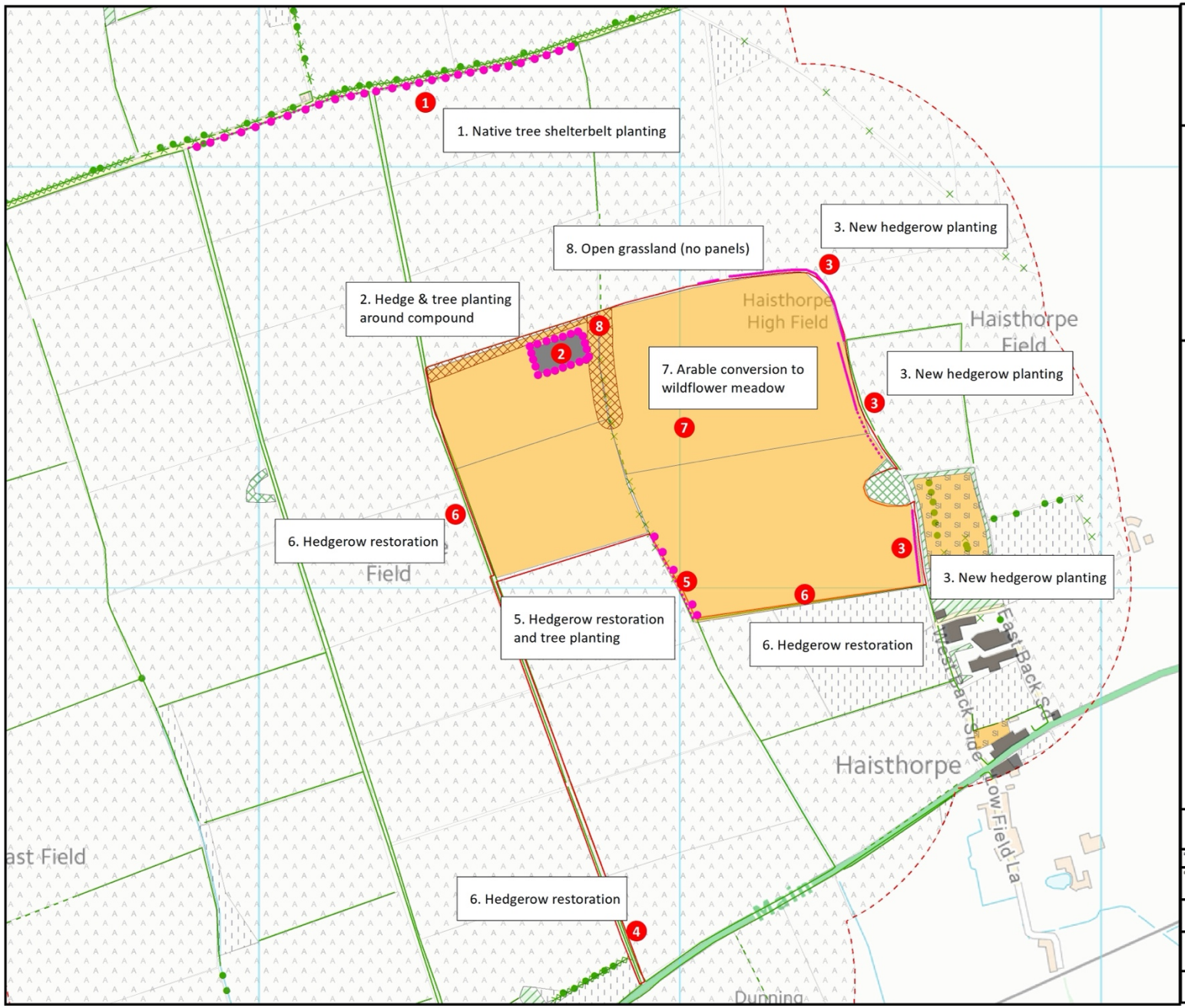
Breeding Birds

One bird species specially protected under Schedule 1 of the Wildlife and Countryside Act from disturbance during breeding was found breeding during the 2020 surveys, quail, and given the habitats present it is possible that other species such as hobby and barn owl could breed there in the future. It would be important to ensure that no Schedule 1 species are disturbed during the breeding season, particularly during the construction phase of the development. Given the potential to breed within the Renewable Energy Park site, a Breeding Bird Protection Plan (BBPP) will be implemented. This will include further surveys for Schedule 1 species at fortnightly intervals through the breeding season (March-August) for the construction period to inform the BBPP and ensure compliance with the 1981 Wildlife and Countryside Act.

The BBPP will also include measures to ensure the protection of all other nesting birds. Where works affecting habitats that could be used by nesting birds must take place between March and August (inclusive), they should only be carried out following an on-site check for nesting birds by an experienced ecologist, to ensure compliance with the 1981 Wildlife and Countryside Act.

Badgers

Pre-construction surveys for badgers will be carried out within 30m of the development footprint prior to the commencement of construction, in case any new setts have been established in this area. If any were found, then further consultation would be needed with Natural England to determine the licensing and mitigation requirement.



RIDGE CLEAN ENERGY

Three Oaks Renewable Energy Park

FIGURE 1

Landscape and Biodiversity Mitigation and Enhancement Plan

KEY:

- LBMEP target notes
- LBMEP tree planting
- Indicative Site Boundary & Access

LBMEP hedgerows

- New planting
- Restoration
- Open grassland (no panels)
- Three Oaks Compound

Habitat

- New species-rich grassland (B2.1)
- A1.1.2 - Broadleaved woodland - plantation
- A2.1 - Scrub - dense/continuous
- B2.2 - Neutral grassland - semi-improved
- B4 - Improved grassland
- J1.1 - Cultivated/disturbed land - arable
- J3.6 - Buildings
- ThreeOaksEcologySurveyArea

Hedgerow:

- Species-poor hedge defunct
- Species-poor hedge intact
- Species-rich hedge defunct
- Species-rich hedge inta
- Bush
- Tree

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LAYOUT DWG	N/A	T LAYOUT NO.	N/A

DRAWING NUMBER: n/a

SCALE - 1:8,500 @ A3

LANDSCAPE AND BIODIVERSITY MITIGATION AND ENHANCEMENT