



APPENDIX 6-4

BIODIVERSITY MANAGEMENT AND ENHANCEMENT PLAN (BMEP)

Biodiversity Management and Enhancement Plan (BMEP)

Umma More Renewable
Energy Development, Co.
Westmeath





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1. INTRODUCTION

1.1 Background

This Biodiversity Management and Enhancement Plan (BMEP) has been prepared in support of the Environmental Impact Assessment Report (EIAR) produced for the proposed Umma More Renewable Energy Development.

The BMEP has been prepared as part of the Proposed Development to offset the potential loss of approximately 2,338m of linear hedgerow and tree habitat within the Site. Approximately 1,412m of this proposed loss of hedgerow/tree habitat is associated with habitat buffering measures required to avoid impact on bats as per NatureScot recommendations (see Table 1-1 below; see also Section 6.1.3 of the Bat Report – Appendix 6-2 of this EIAR). The proposed vegetation removal to prevent impacts on bats is summarised in Table 6-1.

Table 1-1 Assessment of Linear Habitat Features within Turbine Buffers

Turbine No.	Linear habitats within the buffer	Length of Proposed Removal
Turbine 1	Two sections of mature treeline to be removed.	103m
Turbine 2	Two sections of hedgerows and a small section of mature trees to be removed.	290m
Turbine 3	One section of hedgerow to be removed.	153m
Turbine 4	No linear habitats. The turbine is located within conifer plantation habitat, a 50m buffer around the turbine will be created.	n/a
Turbine 5	Two large sections of treeline and partial section of hedgerow to be removed. Treeline contains mature broadleaf trees.	307m
Turbine 6	One section of vegetated stone walls to the east of the turbine, at the edge of the buffer.	103m
Turbine 7	No linear habitats surrounding the turbine.	n/a
Turbine 8	Two sections of hedgerow to be removed.	286m
Turbine 9	Single section of hedgerow south of the turbine to be removed.	170m
Total Linear Habitat Features Proposed for Removal: 1,412m (1.4km)		

The remainder (926m) of linear hedgerow/treeline habitat for removal is to facilitate road widening, new access roads and construction works associated with the Proposed Development.

It is proposed to offset the proposed loss of hedgerow and trees through the creation of new hedgerow and the infilling of existing hedgerow and treeline where the existing features are gappy or defunct. A total of 3,350m of linear hedgerow and treeline habitat is proposed; this extra habitat creation is proposed given that it would not be a like for like replacement, and would take time to establish, and as enhancement. Overall, the proposed replanting will result in a net gain of approximately 1,012m in the linear landscape features within the Wind Farm Site. Planting will be of semi-mature specimens to ensure connectivity gains are immediate, and will be indigenous to the local area. Further details are provided in the Chapter 12 of the EIAR: Landscape & Visual.

2. Biodiversity Measures

2.1 Proposed Replanting Areas

The locations in which the proposed replanting of hedgerow and treeline will take place will be subject to final landowner agreement. The management measures identified in this BMEP are therefore indicative of what can be undertaken within the ELAR Site Boundary. The identified areas for hedgerow planting are illustrated in Figure 2-1. There is an extensive network of existing linear landscape features in the wider area that will be retained and, due to this connectivity that will be largely maintained across the Wind Farm Site by the existing network of linear vegetation bordering agricultural fields, the proposed replanting will be located in the south-eastern portion of the Wind Farm Site, and along the existing watercourse which forms the northern boundary of the Wind Farm Site in this area. Connectivity to the stream will be reinforced by bolstering and patching existing hedgerows and treelines distant from proposed turbine locations, in particular where these treelines offer connectivity to the bat roosts that were identified during the bat surveys carried out (see the Bat Report, Appendix 6-2 of this EIAR, for further details).

2.2 Planting

Planting will be of semi-mature shrub and tree specimens to ensure that connectivity gains are immediate. The species to be used for the replanting will comprise native species locally sourced and species that are already represented within the Site as follows: hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*), Hazel (*Corylus avellana*), elder (*Sambucus nigra*), goat willow (*Salix caprea*), guelder rose (*Viburnum opulus*) spindle (*Euonymus europaeus*), dog rose (*Rosa canina*) with standard trees planted at intervals (e.g. oak with alder useful in wetter areas).

When planting new hedgerow, plants will be closely spaced (a maximum of 50cm apart) and planted in a staggered row. The new hedgerow will need to be protected from browsing by livestock, through the erection of new stockproof fencing where required, which should be at least 1m away from the hedge, and on each side if required.

2.3 Maintenance of Newly Planted Hedgerow and Tree Planting

In order to facilitate the successful establishment of the new hedgerow and trees to be planted within the site, and to promote biodiversity value of the new hedgerow the following measures are proposed:

- New hedgerow shrub planting will be kept weed and litter free until the new plants are established, particularly from ruderal weeds. Healthy growth will be maintained by allowing the plant to occupy as much of the planting areas as possible to allow them to achieve as close their natural form as possible;
- During spring and autumn maintenance periods all trees and plants will be checked and adjusted/replaced as required, soil firmed and any dead wood present removed back to healthy tissue and mulch added if required. Where tree stakes and ties are no longer required these will be removed to avoid damage to the tree;
- During the first growing season, all standard trees/ semi-mature trees will be watered regularly during any prolonged dry periods during the growing season (i.e. in April, May, June, July and August). During the second growing season the trees will be kept well watered as often as required, particularly during June, July and August.

- New hedgerows should be cut annually, with the cutting height raised by 10-15cm each year. This will allow the plants to flower and produce berries whilst preventing the height of the hedgerow from increasing too rapidly.
- Any tree, hedge or shrub that is removed, uprooted, destroyed or that becomes seriously damaged, defective diseased or dead shall be replaced in the same location with another plant of the same species and size as that originally planted. All such replacements shall be carried out within the first planting season following the loss.



Map Legend

- EIAR Site Boundary
- Proposed Turbine Layout
- Bat Buffer
- Proposed Construction Hedgerow/ Treeline Removal
- Proposed Hedgerow Removal within Bat Buffers
- Proposed Hedgerow Replanting

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Drawing Title	
Proposed Loss of Linear Habitat Features and Replanting	
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3. **MONITORING**

To confirm that habitat restoration and enhancement has been successful, all areas of restored vegetation as shown in Figure 2-1 will be monitored post-restoration. This will be undertaken in partnership between the developer, the Project Ecologist and the Landowner. The proposed management actions will be conveyed to the developer and each of the landowners, and management alterations implemented as required to achieve the targets of the management plan.

Hedgerows will be inspected following the main growing season (i.e. in September) for the first five years of growth, where the requirement for replacement planting will be assessed. If any shrubs are dead or damaged these will be replaced using the same species within the next planting season. Recommendations for ongoing or remedial management required will be specified within an Annual Environmental Report

3.1 **Reporting**

Monitoring results will be reported within an Annual Environmental Report with any criteria failures identified and corrective actions implemented. Monitoring results will be reported by a suitably experienced ecologist within an Annual Environmental Report each year for the first 5 years post construction, with any criteria failures identified and corrective actions implemented as part of the Construction Environmental Management Plan (CEMP). Reports detailing the monitoring works carried out, the results obtained and a review of their success, along with any suggestions for amendments to the plan will be prepared in years 1, 2, 3, 4 and 5 following commencement of the plan's implementation.

4.

Conclusions

The measures described in this BMEP will serve to offset the loss of hedgerow and tree habitat associated with the Proposed Development. The plan provides for sufficient habitat restoration to ensure no net permanent loss of linear hedgerow and treeline will occur, and that the areas identified for management will also contribute to restoring defunct hedgerow and improving linear habitat connectivity across the Site for bats and other species. A total of 3,355m of linear hedgerow and treeline habitat is proposed (new and improvement of existing), which will result in a net gain of approximately 1,046m in the linear landscape features within the Wind Farm Site.

The success of these measures will be evaluated through a detailed monitoring and reporting programme. Following the implementation of the measures outlined in this report to offset the loss hedgerow and trees there will be no residual net loss of these habitats on the site, and the additional planting proposed will result in a long-term positive effect in this regard as a result of the Proposed Development.

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