
**Mynydd Fforch Dwm Wind Farm
Naturalis Energy Developments Ltd.**

Appendix 9.4: Outline DRAFT Habitat Management Principles



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1 INTRODUCTION

- 1.1.1 This Technical Appendix has been prepared to accompany the Mynydd Fforch Dwm Wind Farm (hereafter 'Proposed Development') Environmental Statement ('ES').
- 1.1.2 It presents outline habitat management principles to be finalised in consultation with Natural Resources Wales (NRW) and Neath Port Talbot County Borough Council (NPTCBC) (and additional relevant stakeholders) following receipt of planning consent and implemented as a Habitat Management Plan (HMP) in accordance with a suitably worded planning condition.
- 1.1.3 The finalisation and implementation of the HMP would be completed prior to the end of the first year of operation of the Proposed Development, after which the HMP would remain in place as agreed, subject to monitoring of effectiveness, for the remaining operational lifetime of the Proposed Development, as consented.

2 SITE OVERVIEW

- 2.1.1 The term 'the Site' is used throughout this Appendix and is illustrated as the red line planning application boundary on **Figure 9.7: Outline Habitat Management Plan Areas**.
- 2.1.2 Detailed baseline habitat descriptions of the Site are provided within **Chapter 9: 'Ecology'** and **Appendix 9.1** of the ES.
- 2.1.3 In summary, the majority of habitats within the Site comprise semi-improved grassland (acid and neutral) and marshy grassland, with areas of bracken *Pteridium aquilinum*, modified bog and flush. There is some woodland habitat, comprising mixed woodland along part of the northern Site boundary and some blocks of coniferous plantation woodland and semi-natural broad-leaved woodland, mainly in the MFD area.
- 2.1.4 The Site has one Site of Interest for Nature Conservation (SINC; Tyle'r Waun SINC) located within its boundaries, in the east. Baseline studies identified habitats within the Tyle'r Waun SINC as mainly grassland (NVC community U6) and mire (M23b) with smaller pockets of bog/mire (M20, M4 and M6b). The Tyle'r Waun SINC is separated from the rest of the Site (in the MFD area) by the watercourse Nant y Cywion. The Site is also adjacent to Cwm Blaenpelenna SINC which runs along part of the northern Site boundary. The Cwm Blaenpelenna SINC is along part of the watercourse Nant Blaenpelenna. Baseline studies identified habitats within the Cwm Blaenpelenna SINC (which were partially included during baseline surveys) as predominantly mixed woodland.
- 2.1.5 Open habitats (including acid and marshy grassland) within the Site are typically subject to livestock (sheep) grazing.
- 2.1.6 The Site is bordered by principally commercial forestry to north and south, and the operational Pen y Cymoedd Wind Farm to the east.

3 STRUCTURE OF THE HABITAT MANAGEMENT PLAN

- 3.1.1 There will be five Aims and related objectives of the Proposed Development's HMP, achieved through the implementation of management prescriptions and habitat creation practices, outlined herein.

- 3.1.2 The success of management prescriptions and habitat creation in achieving the aims and objectives of the HMP will be monitored, with the results reported, in accordance with timings and protocols to be agreed with NRW and NPTCBC (and additional relevant stakeholders).

4 OVERVIEW OF AIMS AND OBJECTIVES

4.1 Approach to HMP

- 4.1.1 The Proposed Development infrastructure layout has been designed to minimise potentially significant effects on sensitive ecological and ornithological features and peat reserves. A description of the Proposed Development is given in **Chapter 2: Site Description** of the ES.
- 4.1.2 Opportunities for restoration and enhancement of bog have also been identified and which in turn will aim to enhance the biodiversity, flood storage and carbon sequestration/ storage of the Site.
- 4.1.3 Where habitat management measures or other operations may result in impacts on protected species or habitats, protective measures will be implemented as follows:
- Habitat Specific Protection Plans (HSPPs) detailing good practice measures for construction works within mire/bog habitats. HSPPs would detail measures required to manage construction works within these sensitive habitats and include habitat restoration measures; and
 - Species Protection Plans (SPPs) for protected species so as to ensure all works are completed in accordance with relevant legislative requirements. Where necessary, derogation licences would be obtained from NRW.
- 4.1.4 The Tyle'r Waun SINC and Cwm Blaenpelenna SINC on, or adjacent to, the Site are the focuses for the habitat enhancement measures, as well as habitats outside the SINC, but within the Site, and enhancement opportunities will be explored in consultation with NRW and NPTCBC. Measures proposed will aim to support and encourage existing activities that maintain and enhance the biodiversity interest of the management areas (including stated on the SINC documentation provided by the South East of Wales Biodiversity Records Centre during the desk study; see **Appendix 9.1**).
- 4.1.5 A standard habitat management measure to be adopted is for the 'bat buffer' between operational turbines and trees (see **Chapter 9: 'Ecology'**) to be maintained as the current habitat type (grassland) to prevent the establishment of scrub and/or forest regeneration. The establishment of scrub and tree saplings would otherwise have the potential to contravene the effectiveness of bat buffers as an embedded mitigation measure for the Proposed Development.
- 4.1.6 The aims, objectives and habitat management measures outlined herein would be further refined and prescribed through detailed site investigation work and further consultation with the NRW and NPTCBC.

4.2 Aim 1: Enhancement of Moorland Habitats

Management Area: Tyle'r Waun SINC (Area A) and M25a NVC Plant Community

Objective 1: Improve Condition of Mire

- 4.2.1 The Tyle'r Waun SINC includes blanket bog as a main qualifying feature. Blanket bog is a priority habitat listed on Section 7 of the Environment (Wales) Act 2016.
- 4.2.2 Baseline studies have identified that the SINC is approximately half grassland (U6), but with some remnant mire/bog habitat. It is proposed that measures like a hydrological improvement plan will be implemented, aimed at retaining water within the SINC by directing it away from appropriate ditch-lines/watercourses and back into water dependent habitats (i.e. wet modified bog). The focus of the enhancement works within the SINC will be the 1.69ha area of wet modified bog ('M20 Eriophorum vaginatum blanket bog'). Note, no such habitat is being affected (directly or indirectly) by the Proposed Development.
- 4.2.3 The M25a NVC plant community, where on deeper peat (>0.5m), in the west of the Site (area of M25a habitat is shown in **Figure 9.7**) is considered to have potential to be restored to a better-quality mire/bog habitat. The M25a habitat covers an area of 32.2387ha, with 1.183ha and 2.863ha (total of 4.046ha) to be respectively directly and indirectly¹ lost because of the Proposed Development. Given the M25a habitat has now been planted with forestry, it is thus considered that up to 6.74ha of M25a habitat (the area of habitat located around Turbines 1 and 2 where trees have not been planted) will be considered for potential enhancement opportunities.
- 4.2.4 Peatland restoration through ditch blocking is a standard way to raise water levels and to improve the habitat quality in areas of blanket bog/mire habitats. To carry this out effectively a hydrological survey of the restoration areas will be undertaken prior to any habitat management works and inform a site-specific hydrological improvement plan. This will allow ditches suitable for blocking to be highlighted and a targeted plan to be created. Areas for such treatment will be subject to site investigation survey and assessment by suitably qualified hydrologists and ecologists to ensure water levels out-with the management areas are not raised.
- 4.2.5 Any surplus peat (ES Appendix 11.2, Table 6-1) excavated for the Proposed Development within the Site will be used onsite, where possible, for enhancement within the M25a habitat in the west of the Site and within the Tyle'r Waun SINC (if considered appropriate) to further enhance peatland habitat within these management areas. Such usage of peat will be advised by a suitably qualified peat specialist.
- 4.2.6 It is understood that the Tyle'r Waun SINC is used for livestock (sheep) grazing and has been subject to some previous burning, which has likely suppressed heath development. It is likely that livestock grazing within this area will continue throughout the operational lifetime of the Proposed Development and as such, habitat management principles to be further detailed and implemented will comprise a sensitive grazing regime. The objective will be to manage grazing densities (such as those documented in Chapman, 2007) within the management area, to prevent overgrazing and encourage and maintain a good overall habitat condition. For the first few years after restoration,

¹ Out to 10m from the Proposed Development footprint.

management areas (in the Tyle'r Waun SINC and M25a habitat) will be protected from grazing entirely with fencing erected around the enhanced habitat.

- 4.2.7 During baseline studies, encroachment of scrub/saplings of adjacent commercial crop was not considered a substantive issue. However, it is proposed that as part of the habitat management programme, any encroaching saplings and/or scrub into the area are cleared to prevent potential colonisation.
- 4.2.8 An initial trial period of up to five years from implementation is similarly suggested, after which the effectiveness of enhancement measures would be re-assessed in consultation with NPTCBC (and additional relevant stakeholders).

4.3 Aim 2: Enhance Habitat for Reptiles and Amphibians

Management Area: Tyle'r Waun SINC (Area A)

Objective 1: Improve Hibernation and Sheltering Opportunities for Reptiles and Amphibians

- 4.3.1 The Tyle'r Waun SINC includes adder and common lizard as qualifying features, with common lizard and adder recorded within the Site during baseline information gathering (see Appendix 9.2). Adder and common lizard are both priority species listed on Section 7 of the Environment (Wales) Act 2016.
- 4.3.2 Using waste material from excavations associated with the Proposed Development; rocks, earth and wood will be used to form hibernacula for reptiles present to use, with such features likely to be particularly important during the winter period, but also to provide shelter and cover throughout the rest of the active reptile period. The mounds will also provide habitat for invertebrates and small mammals, which represent potential food sources for reptiles and birds. The locations of hibernacula would be identified and confirmed in agreement with NRW and NPTCBC.
- 4.3.3 Aim 1 above will benefit reptiles, particularly the adoption of a sensitive grazing regime. It is prudent that some habitat within Area A is left dry (with re-wetting as described in Aim 1 targeting those habitats associated with the wet modified bog), as drier/tussock habitats will benefit reptiles (and amphibians).
- 4.3.4 Any further achievable habitat enhancement measures to benefit reptiles will be considered through liaison with NRW and NPTCBC.

4.4 Aim 3: Manage Mosaic Habitat

Management Area: Cwm Blaenpelenna SINC (Area B)

Objective 1: Reduce Scrub/Tree Encroachment

- 4.4.1 The Cwm Blaenpelenna SINC is a previous colliery site which is described in the SINC information documentation as comprising of a mosaic habitat of open bare ground, dry heath, grassland, wetland (associated with the watercourse Nant Blaenpelenna), scrub and woodland. The SINC was last surveyed in 2017, and recommended management for the SINC stated within the SINC information documentation is scrub/tree clearance to halt the decline in open habitats, while maintaining the mosaic character. Baseline studies for the Proposed Development (although they did not cover the

whole SINC) identified the eastern part of the SINC as mixed woodland. It is therefore considered that the SINC has been extensively colonised by scrub/trees, and management to clear some scrub/trees will be undertaken to provide a greater extent of open areas. This will benefit invertebrates (such as butterflies), several of which are qualifying features of the SINC.

- 4.4.2 A scrub/tree clearance plan will be agreed with NRW and NPTCBC, which will include the extent of the areas to be cleared and the frequency in which clearance works would be required.

4.5 Aim 4: Monitoring SINC Condition

Management Area: Tyle'r Waun SINC (Area A) & Cwm Blaenpelenna SINC (Area B)

Objective 1: Assess Reptile and Invertebrates Numbers

- 4.5.1 A programme of reptile surveys will be scheduled for the Tyle'r Waun SINC to assess reptile numbers and the effectiveness of enhancement works. This is prudent given reptiles are qualifying features for the SINC. The programme will include surveys prior to enhancement works, and then repeat surveys over the course of the Proposed Development's lifespan. The programme (including the frequency of surveys) will be agreed through consultation with NRW and NPTCBC. It is considered that these surveys could be undertaken during the same survey years as monitoring detailed in section 5.
- 4.5.2 A programme of invertebrate surveys will be scheduled for the Cwm Blaenpelenna SINC to assess invertebrate numbers and effectiveness of enhancement works (given the SINC has several qualifying invertebrate species). Like the reptile programme, the specifics of the invertebrate survey programme will be agreed through consultation with NRW and NPTCBC.
- 4.5.3 Survey results will be shared with NRW and NPTCBC to provide updated information for condition assessments of the two SINCS.

4.6 Aim 5: Enhancement of Opportunities for Nesting and Foraging Birds

Management Area: Habitats within the Site boundary

- 4.6.1 The open moorland habitats within the Site, primarily provide nesting opportunities for a narrow range of ground nesting birds.
- 4.6.2 The potential for the enhancement of opportunities for nesting birds within the Site boundary will be included by a suitable competent and qualified ecologist and prioritise the provision of measures for species on Section 7 of the Environment (Wales) Act 2016.

Objective 1: Enhance Breeding Habitat for Ground-nesting Species

- 4.6.3 The bog enhancement and restoration detailed as **Aim 1** would benefit ground-nesting species. This would include the adoption of a sensitive grazing regime to minimise overgrazing of moorland habitats, while maximising the benefits that grazing brings (keeping sward length relatively low for the establishment of nest sites). It would also include the removal of any establishing tree saplings/scrub which would likely adversely affect ground-nesting bird species.

Objective 2: Enhance Breeding and Foraging Opportunities for Other Bird Species

- 4.6.4 Measures for improving and/or creating nesting and foraging opportunities for other birds to be explored will comprise the installation of nest boxes, such as those suitable for barn owl *Tyto alba*. It is envisaged that nest boxes will be fixed to appropriate mature trees within the Site. Appropriate field boundaries/fence-lines will also be identified onsite for hedgerow planting of hedge species of local provenance (prioritising fruit-producing species) which will provide nesting and foraging resources for many bird species. The principal focus of hedgerow planting will be associated with the proposed solar arrays (as shown in **Figure 9.7**). The hedgerows will be planted appropriately offset from operational turbines in order to maintain 'bat buffers' (see **Chapter 9: 'Ecology'**).
- 4.6.5 A bird nest box plan within the Site boundary will also be designed by a suitably competent and qualified ecologist for incorporation into the HMP, with the number, type and location of boxes identified in consultation with relevant stakeholders and sensitive to the Proposed Development.

5 MONITORING

- 5.1.1 A monitoring programme would be established and agreed in consultation with NRW, NPTCBC and other relevant stakeholders. This would check compliance of habitat management measures implemented along with monitoring the effectiveness of such measures. See also monitoring proposed for reptiles and invertebrates in section 4.5.
- 5.1.2 Monitoring is proposed as part of the HMP in operational years 3, 5, 10 and 15 of the Proposed Development and would consist of checks of the habitat enhancement measures detailed in this Appendix. The Developer would provide a summary of the HMP activities and monitoring results to NRW and NPTCBC each year of monitoring. The frequency of monitoring and reporting thereafter would be agreed with key stakeholders (NPTCBC and NRW).
- 5.1.3 The requirement for any updated baseline surveys to act as Year 0 for monitoring purposes would also be identified and undertaken at the appropriate time (such as, within the first year of operation of the Proposed Development and during the main growing/ breeding season March to August, inclusive).
- 5.1.4 The HMP is intended to remain a live document which would be updated and amended as necessary, based on results of the Site investigation works and monitoring. NRW and NPTCBC would be kept informed of any proposed changes to the HMP and their agreement sought as necessary.

6 REFERENCES

Chapman, P. (2007) *Conservation grazing of semi-natural habitats*. Scottish Agricultural College, Technical Note TN586.