



# **Sperberry Hill Solar Array and BESS**

## **Landscape and Ecological Management Plan**

**Prepared for**

**Brockwell Storage and Energy Ltd.**

**November 2025  
3732-01-01 LEMP**



# Document Control

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|                 |               |             |                        |

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## 1.0 INTRODUCTION

### 1.1 Overview

1.1.1 This document comprises the Landscape Ecology Management Plan ('LEMP') for the Sperberry Hill Solar Array and BESS ('the Development').

1.1.2 The LEMP has been prepared on behalf of Brockwell Storage and Energy Ltd ('the Developer'), in order to discharge Condition 16 of Planning Permission 24/02455/FP.

1.1.3 Condition 16 states:

*"No development approved by this permission shall take place until a landscape and ecological management plan (LEMP) has been submitted to, and approved in writing by, the local planning authority. The content of the LEMP shall include the following:*

*a) Description and evaluation of features to be managed.*

*b) Ecological trends and constraints on site that might influence management.*

*c) Aims and objectives of management.*

*d) Appropriate management options for achieving aims and objectives.*

*e) Prescriptions for management actions.*

*f) Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period).*

*g) Details of the body or organization responsible for implementation of the plan.*

*h) Ongoing monitoring and remedial measures.*

*The LEMP shall also include details of the legal and funding mechanism(s) by which the longterm implementation of the plan will be secured by the developer with the management body(ies) responsible for its delivery. The plan shall also set out (where the results from monitoring show that conservation aims and objectives of the LEMP are not being met) how contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved scheme. The approved plan will be implemented in accordance with the approved details.*



- 1.1.4 Locations within the LEMP where the requirements of Condition 16 are addressed are set out in Table 1.

**Table 1: Condition 16 Requirements and Location in the LEMP**

| Requirement                                                                                                                                                                                                              | LEMP Section                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| a) Description and evaluation of features to be managed.                                                                                                                                                                 | Section 2.0                 |
| b) Ecological trends and constraints on site that might influence management.                                                                                                                                            | Section 2.0                 |
| c) Aims and objectives of management.                                                                                                                                                                                    | Section 2.0                 |
| d) Appropriate management options for achieving aims and objectives.                                                                                                                                                     | Section 5.0 and Section 6.0 |
| e) Prescriptions for management actions.                                                                                                                                                                                 | Section 5.0 and Section 6.0 |
| f) Preparation of a work schedule (including an annual work plan capable of being rolled forward over a five-year period).                                                                                               | Section 7.0                 |
| h) Ongoing monitoring and remedial measures.                                                                                                                                                                             | Section 8.0                 |
| The LEMP shall also include details of the legal and funding mechanism(s) by which the long-term implementation of the plan will be secured by the developer with the management body(ies) responsible for its delivery. | Section 1.0 and Section 3.0 |
| How contingencies and/or remedial action will be identified, agreed and implemented so that the development still delivers the fully functioning biodiversity objectives of the originally approved scheme.              | Section 8.0                 |

- 1.1.5 With regards to the requirement to include details of the legal and funding mechanisms for delivery of the LEMP, the requirement to produce the LEMP is set out in the Conditions attached to Planning Permission 24/02455/FP, and consequently the legal mechanism is the relevant planning act. It is the responsibility of the Developer to provide funding for the measures set out in the LEMP for the operational life of the Development, as set out in Section 3.0.
- 1.1.6 The LEMP describes existing and proposed habitats at the Site, the mitigation and enhancement measures for those habitats, and the management procedures that will be adopted to ensure the habitats are maintained appropriately for the duration of the development.
- 1.1.7 The LEMP is a working document and will be subject to regular review and updates throughout the lifetime of the development.

- 1.1.8 Separate schemes have been submitted to discharge other planning conditions. A number of these schemes have some relevance to the LEMP, as outlined below.

**Table 2 Relevant Conditions**

| Condition Number                          | Condition requirements                                                               |
|-------------------------------------------|--------------------------------------------------------------------------------------|
| Statutory Biodiversity Net Gain Condition | Biodiversity Net Gain Plan (including Habitat Management and Monitoring Plan (HMMP)) |
| 7                                         | Detailed Surface Water Drainage Scheme                                               |
| 9                                         | Archaeological Written Scheme of Investigation                                       |
| 17                                        | Arboricultural Method Statement                                                      |
| 19                                        | Detailed Landscape Scheme, including hard and soft specifications and implementation |
| 21                                        | Protection and replacement of existing tree planting                                 |
| 22                                        | Soil Management scheme, including details of soil amelioration                       |
| 26                                        | Grazing Management Plan                                                              |

- 1.1.9 The schemes prepared in relation to Condition 1 Statutory Biodiversity Net Gain and Condition 19 have particular relevance to the LEMP.
- 1.1.10 The HMMP sets out the details of how biodiversity net gain will be achieved to discharge Condition 1.
- 1.1.11 A detailed Landscape Scheme has been prepared to discharge Condition 19. The scheme includes detailed specifications for all planting and seeding with details of ground preparation and implementation. Detailed drawings show location and types of planting and seeding, with accompanying detail drawings.



## **2.0 THE PROPOSALS**

### **2.1 Aims and Objectives of the Proposals**

2.1.1 The aims and objectives of the landscape and ecological proposals are as follows:

- i) Create pasture grassland providing a varied species and sward structure that is
  - a) Productive for livestock,
  - b) Which provides pollen and nectar for biodiversity benefit.
- ii) Create species-rich grassland providing:
  - a) Enhanced hedgerow buffer zones.
  - b) A varied habitat structure with new and enhanced foraging opportunities for birds.
  - c) Nectar, pollen and shelter for invertebrates, amphibians, reptiles and small mammals.
  - d) Wet grassland habitat within the surface water attenuation basin.
- iii) Create new native woodland providing:
  - a) A diverse and healthy habitat.
  - b) Screening of the views of the Development, including from the Farmhouse and Redcoats Hotel.
  - c) Landscape integration, and in particular the restoration of former field boundaries
  - d) Enhance ecological connectivity.
- iv) Create new native hedgerows providing:
  - a) Visual screening of the Development.
  - b) Landscape integration.
  - c) Enhanced ecological connectivity.
  - d) New and enhanced shelter and foraging opportunities
- v) Gap up of existing hedgerows to enhance their screening function and to enhance ecological connectivity.
- vi) Provide the Biodiversity Net Gain identified in the Developer's Planning, Design and Access Statement (c. 95% net gain in habitat units), and reflecting the specific target for each habitat type set out in the HMMP submitted to discharge the Statutory Biodiversity Net Gain Condition, as follows:
  - a) Proposed Woodland. Other woodland; broadleaved – poor condition within 5 years



- b) Proposed Pasture. Modified grassland – moderate conditions within 4 years.
- c) Proposed Species-rich Grassland – moderate condition within 5 years.
- d) Proposed Surface water attenuation basin. Sustainable drainage system – moderate condition within 3 years.
- e) Proposed Hedgerow. Species-rich native hedgerow – moderate condition within 5 years
- vii) Enhance habitat value for invertebrates.
- viii) Create/enhance foraging, shelter and breeding opportunities for other wildlife.
- ix) Control of invasive non-native species.

## **2.2 The Landscape Scheme**

2.2.1 The detailed landscape proposals are illustrated on Drawings 3732-01-13, 3732-01-14, 3732-01-15 and 3732-01-16 which have been produced to discharge Condition 19.

2.2.2 The landscape proposals would include the following:

- i) Retention and management of all existing woodland and hedgerow vegetation, within the Site, and the maintenance of a minimum 6m wide buffer between this vegetation and the fencing around the solar plots.
- ii) Retention and management of all existing dry ditches within the Site.
- iii) Creation of grassland within the perimeter/stock fencing suitable for sheep grazing.
- iv) Species-rich grassland between field boundaries and perimeter/stock fencing.
- v) Approximately 5,500 m<sup>2</sup> of new native-species woodland planting approximately 7.5m wide along parts of the north-western and northern boundaries of the Site.
- vi) Approximately 1,435m of new native-species hedgerows alongside Sperberry Hill and public footpaths.
- vii) Approximately 415m of additional boundary hedgerow planting.
- viii) Approximately 455m of gapping up of existing hedgerows around and within the Site which are generally in a poor and declining condition.
- ix) All hedgerows (existing and proposed) to be maintained at a minimum height 3m.
- x) Creation of one seasonally wet attenuation basin, seeded with a species-rich wet grassland mix
- xi) 6 no. bat boxes and 6 no. bird boxes to be provided.



## 2.3 Indicator Criteria

2.3.1 Where new planting and seeding is proposed, the objective criteria set out below will be used to determine whether establishment has occurred.

i) Woodland areas

- a) Planting within the plots shall have established to a degree that stakes and guards can be removed, and maintenance of weed free circles is no longer necessary to enable continued growth and vigour.
- b) At least 85% of plants have survived.

ii) Hedgerows

- a) Vegetation coverage shall be approximately 80% of the basal area (this being approximately 0.2m either side of the planting rows).
- b) Approximately 85% of plants shall have established to a degree that stakes and guards can be removed, and maintenance of weed free strips are no longer necessary.
- c) Gaps make up less than 10% of total length and no canopy gap is greater than 0.5m length.
- d) The hedgerow is free from invasive non-native species.

iii) Grassland areas

- a) The sward shall have established fully with coverage of at least 90% of the area.
- b) The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat. Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.
- c) Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm).
- d) Cover of bare ground is between 1 and 5%, including localised areas.
- e) Cover of bracken less than 20% and scrub cover no more than 5% of grassland areas.
- f) There is an absence of invasive non-native species.
- g) There are greater than 9 species per metre squared.



## **2.4 Ecological Trends and Constraints**

- 2.4.1 Climate change resulting in warmer and drier summers, wetter more stormy winters and more extreme weather events in general could potentially affect habitats on and adjacent to the Site. The management of the site may need to be reviewed to adapt to this.
- 2.4.2 Due to the nature of the Site, soils have likely been subject to agricultural improvement and as such may have higher than desirable nutrient levels.
- 2.4.3 The Site is located within flood zone 1 'low risk'. There is a small area with a low, medium and high risk of surface water flooding in the south of the Site, following an existing ditch field boundary. Sustainable drainage features are included in the design of the Development.
- 2.4.4 Six invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 have been recorded on site in the past, but were not observed as part of the habitat survey that informed the planning submission. The species recorded were Himalayan Balsam, Japanese knotweed, variegated yellow archangel, montbretia, Virginia Creeper and Rhododendron.
- 2.4.5 Should any invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 be encountered on the Site or immediately surrounding the Site prior to or during construction, the advice of a suitably qualified ecologist will be sought and appropriate measures taken to prevent the spread of such plants.



### **3.0 ROLES AND RESPONSIBILITIES**

- 3.1.1 The Developer will be responsible for the financial and practical delivery of the measures detailed within this LEMP.
- 3.1.2 The Developer shall be responsible for the cost of implementing the LEMP including the cost of carrying out any management, monitoring, or other such activities, as detailed within this document.
- 3.1.3 The management and maintenance of the habitats within the Site, as set out in the LEMP will be the responsibility of the Developer
- 3.1.4 All works associated with the implementation of the LEMP will be undertaken by experienced contractors and / or under the watch of a suitably qualified (and where required, licenced) ecologist.
- 3.1.5 In the event of a change of ownership, responsibilities held by the Developer will transfer to the new owners.
- 3.1.6 The Developer and appointed contractors will identify hazards associated with maintenance operations proposed and undertake a full Risk Assessment which will be recorded and retained for reference.
- 3.1.7 All works will be undertaken in accordance with the latest guidance on safe working practices, including information from the recognised industry bodies, the local authority and the government Health and Safety Executive.
- 3.1.8 The LEMP itself will be reviewed every five years and updated as required. Further details are set out in Section 8.0.



## **4.0      TIMESCALES**

- 4.1.1      The management and maintenance measures set out in the LEMP will cover a 40-year period following practical completion of the landscape works that are set out in the scheme prepared to discharge Condition 19.
- 4.1.2      It is anticipated that grassland establishment would take approximately one year, and that establishment of new tree planting would take between three and five years.
- 4.1.3      No cutting or trimming of trees or hedges will be undertaken during the breeding bird season (01 March to 31 August inclusive).
- 4.1.4      Long-term management prescriptions will apply once establishment is complete. Existing trees, shrubs and hedgerows will be subject to long-term management from practical completion of the landscape works.

## 5.0 ESTABLISHMENT MANAGEMENT & MAINTENANCE (NEW VEGETATION)

### 5.1 General

- 5.1.1 No cutting or trimming of tree planting, including woodland and hedgerows, will be undertaken during the breeding bird season (1st March to 31st August inclusive) unless absolutely necessary and then only after a suitably qualified ecologist has undertaken a nesting survey and confirmed an absence of nesting birds in and adjacent to the section to be cut.
- 5.1.2 All plants will remain upright. All canes, stakes, guards, spirals and ties, and any stock-proof fencing will be regularly checked, replaced as required and removed from Site and disposed of once plants have established. This is to be checked annually.
- 5.1.3 Bark mulch will be topped up annually or as required, to maintain 50mm deep layer, until the plants have established.
- 5.1.4 During the establishment period (the first five years), all dead, dying or diseased stock will be replaced with stock of similar size and species. If the failure of the plant is due to disease and the disease is considered likely to re-occur, then an alternative native species of local provenance may be used as a replacement, to be agreed with North Hertfordshire District Council (NHDC). The exact timing of replacement planting is dependent on the ground conditions; however, planting will take place between the months of November and February inclusive.
- 5.1.5 An annual inspection is to be undertaken in September to identify dead/diseased plants to be replaced at the end of each growing season.

#### ***Woodland***

- 5.1.6 The planting areas (1m-1.5m radius around each stem) will be kept mulched and weed-free during the establishment period using approved hand-weeding or if necessary, herbicide treatment (applications in April, June and August). *The Weed Control Handbook* (Natural England, 2025) provides guidance on appropriate herbicide use in relation to nature conservation works. Where used, herbicides will be sprayed in appropriate weather conditions (i.e. during periods of low wind and no excessive rainfall) in accordance with the supplier's instructions), to avoid affecting adjacent grassland areas and will not be used within 10m of watercourses, ditches or ponds.



- 5.1.7 This treatment will be carried out until the tree canopy has sufficiently closed over as to provide a level of shading likely to inhibit excessive weed/grass growth. This level of canopy closure would also be an indication of a degree of root development that would no longer make herbicide spraying necessary.
- 5.1.8 During the establishment period, trees will be inspected during periods of warm weather and drought. If it is considered that the ground conditions are too dry, steps should be taken to water the planted areas using a bowser until weather conditions are considered suitable for watering to cease.
- 5.1.9 Trees within woodland planting areas will typically be left to grow naturally and not pruned unless necessary to maintain the health of the tree or for safety reasons.

#### ***Hedgerow Planting***

- 5.1.10 Plants will remain upright and adjusted during removal of weeds.
- 5.1.11 Any litter accumulated around hedgerow bases is to be cleared at the same time as weed control operations.
- 5.1.12 Newly planted hedgerows will be topped by up to one-third in the first winter following planting and then allowed to grow for 2-3 years before the next cut. Following the first cut, the hedgerow will be cut at an increased height of minimum 100mm until it has reached 3m height. Any plants that fail to thrive shall be replaced with stock to the original specification.
- 5.1.13 All hedgerows shall be regularly watered in times of drought to field capacity and shall receive an application of slow-release fertiliser for the first three years.
- 5.1.14 The base of all hedgerows are to be kept weed-free. Manual removal of weeds should be undertaken in the first instance. If this is not successful, up to 3 no. applications of systematic herbicide per growing season should be actioned, with a combination of visits to manually remove weeds in conjunction with the use of herbicide, during the first three years. Where a hedgerow is within 10m of a watercourse, ditch, pond or wetland, weed removal shall be carried out manually



## 5.2 Grassland

- 5.2.1 The grassland will not be improved by chemical fertiliser or slurry and nutrient levels in the soil should be allowed to reduce over time.
- 5.2.2 Mowing will only take place during periods of dry weather to ensure that any waterlogged ground is not damaged by machinery.
- 5.2.3 The grassland will be monitored to ensure establishment of a healthy sward is achieved and over-grazing does not occur; further details of monitoring and remedial measures are outlined in Section 8.0.

### *Species-rich*

- 5.2.4 Autumn sown species rich grassland, including wet grassland, will be left uncut until April. The grassland will then be cut to 70-100mm height. Following an April cut the grassland will be allowed to flower and set seed before receiving an annual hay cut in July.
- 5.2.5 All arisings should remain on Site for 3-5 days following the cut to allow seeds to disperse, and then be removed from Site.

### *Pasture*

- 5.2.6 Pasture grassland areas will be grazed lightly from 6-8 weeks following sowing. The grazing density shown in the table below is based on medium-sized sheep (e.g. 60kg)

**Table 3 Stocking Levels.**

| Number of grazing weeks per year | Neutral Grassland (sheep per ha) |
|----------------------------------|----------------------------------|
| 16                               | 12.5                             |
| 20                               | 10                               |
| 24                               | 8                                |
| 36                               | 5.5                              |
| 52                               | 4                                |

Adapted from the Lowland Grassland Management Handbook produced by Natural England



## **6.0 LONG-TERM MANAGEMENT AND MAINTENANCE**

### **6.1 Introduction**

- 6.1.1 The tasks set out below will be carried out across the Site for the operational life of the Development, or as otherwise required.

### **6.2 General Management**

#### ***Fencing***

- 6.2.1 All fencing, including any gates, stiles or other associated structures shall be maintained in good condition throughout the life of the Development.

#### ***Litter***

- 6.2.2 Litter and debris shall be removed as required as part of each regular maintenance visit, including from ditches/waterbodies.

#### ***Weeds***

- 6.2.3 Problem perennial weeds will be controlled initially by hand pulling, or if necessary, by careful targeted application of a non-residual herbicide by way of spot spraying with a knapsack (low pressure to avoid spray drift), or by weed wiping. No herbicide application will be carried out within 10m of watercourses, ditches or ponds. Herbicide application will be used in April, June and August if required.
- 6.2.4 If invasive non-native species listed under Schedule 9 of The Wildlife & Countryside Act 1981 (as amended) or the EU Invasive Alien Species Regulation (1143/2014) are encountered on site or immediately surrounding the Site at any time the advice of a suitably qualified ecologist will be sought, and the appropriate measures taken to prevent the establishment and spread of such plants around the Site.
- 6.2.5 Where required a suitably experienced specialist management company will be instructed to eradicate the invasive non-native species from the Site. Any arisings will be disposed of offsite to a suitably licenced waste disposal facility.

#### ***Public Access***

- 6.2.6 All public rights of way and permissive paths within the Site will be kept free from obstruction, save where required to be crossed for maintenance, which may require



temporary obstructions/closures. Any temporary closures or diversions to public rights of way must be agreed with NHDC.

### ***Utilities***

- 6.2.7 The implementation and management of all landscape and ecological proposals shall have regard to the presence of underground and overhead utilities, and shall not interfere with the operation and maintenance of these.

### ***Vehicular Access***

- 6.2.8 Vehicular access to the Proposed Development will be limited to maintenance activities. Access tracks will be inspected as part of regular monitoring activities (see Section 8.0) to ensure no unacceptable erosion is occurring, and remedial action would be taken where appropriate.

## **6.3 Planting**

- 6.3.1 An annual inspection is to be undertaken in September to identify dead/diseased plants to be replaced at the end of each growing season.
- 6.3.2 No cutting or trimming of tree planting, including woodland and hedgerows, will be undertaken during the breeding bird season (1st March to 31st August inclusive) unless absolutely necessary and then only after a suitably qualified ecologist has undertaken a nesting survey and confirmed an absence of nesting birds in and adjacent to the section to be cut.
- 6.3.3 All guards and stakes shall be removed from plants once they are no longer required. These shall be disposed of off-site. Biodegradable guards may be left on-site.
- 6.3.4 Any arisings from management, e.g. cuttings from thinning/coppicing or from hedge trimming, may be left in piles (typically around the edges of woodland areas), in order to provide additional habitat for invertebrates, amphibians and reptiles and small mammals (if present). Arisings left in piles should only be removed from Site for essential reasons such as to retain access to infrastructure.

### ***Woodland***

- 6.3.5 Following the initial establishment maintenance period, the woodland planting areas will require minimal management. Monitoring inspections will be carried out at



intervals as detailed in Section 8.0 to ensure the habitat is developing for the enhancement of wildlife interest and meeting the aims and objectives outlined in Section 2.0.

- 6.3.6 Woodland planting areas will be left to grow naturally and not cut apart from pruning if necessary to maintain the health of the tree or for safety reasons for the first 10 years.
- 6.3.7 From Year 10 onwards, selective thinning will be carried out to achieve a more diverse woodland structure. Any trees with poor form or undesirable characteristics will be removed; where birch is outcompeting larger tree species such as oak, birch will be thinned to allow the establishment of the larger species.

### ***Hedgerows***

- 6.3.8 A third of the total of established hedgerows will be cut each year, but the length cut shall not be in one long section, rather distributed in smaller sections throughout the whole Site. This will maintain a resource of flowering and fruiting plants across the site, creating nesting and foraging habitats for wildlife.
- 6.3.9 Hedgerows alongside all access routes (whether for maintenance access or for recreation/amenity) will receive an additional annual cut on the side facing the routeway where necessary, to ensure they will not encroach or impede access.
- 6.3.10 Any existing trees located within hedgerows will be left to grow naturally and not cut. These will be clearly marked to ensure that they are not cut back during hedgerow trimming/maintenance works.
- 6.3.11 Hedgerows will be maintained at a minimum height of 3m.
- 6.3.12 Hedgerows will be cut between late September and February, and no cutting or trimming is to be undertaken during the bird breeding season (01 March to 31 August inclusive) unless supervised by a suitably qualified ecologist.

## **6.4 Grassland**

### ***Species-rich***

- 6.4.1 After the first year following seeding, grassland will be managed as shown within the schedule below:



**Table 4 Guide to timings of management of species rich grassland**

| Timing                | Management                                                                                                                                                                                                       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| July to August        | Summer hay cut to a height of 40-75mm. Arisings should be left for between 5 and 7 days before being removed to allow seeds to drop.                                                                             |
| September to November | Autumn cut to a height of 40-75mm and remove arisings. Ideally at least two cuts should be undertaken in this period after the summer hay cut. If grass growth is vigorous more frequent mowing may be required. |
| March                 | Spring cut to a height of 40-75mm. Need for mowing can be assessed based on growth and is most likely to be required in the early years following establishment.                                                 |
| December to February  | No management required                                                                                                                                                                                           |

6.4.2 Where practical, cutting will adopt a systematic method (i.e. working from the centre outwards towards the boundary features) or from the development fence line out towards the boundary hedgerows to allow fauna to temporarily and safely vacate the area.

6.4.3 Mowing will only take place during periods of dry weather to ensure that any waterlogged ground is not damaged by machinery.

6.4.4 If required, intermittent and very light density grazing could be used as an alternative in subsequent years, from September to December.

#### ***Species Rich Wet Grassland***

6.4.5 Following establishment, the species rich wet grassland will be managed by a once annual hay cut to a height of ca. 50mm in autumn. Arisings will be left on site to dry and shed seeds for 5-7 days before removal. The grassland may then be mown or grazed to a height of 50mm until March.

6.4.6 Mowing will only take place during periods of dry weather to ensure that any waterlogged ground is not damaged by machinery.

#### ***Pasture***

6.4.7 Pasture grassland will be grazed as set out in Section 5.0.

6.4.8 If grazing is unable to be undertaken at any time during the operation of the solar farm, mechanical cutting will be undertaken instead to replicate a sward height where:

- i) Approximately 75% of the grassland is cut to height 5cm.



- ii) Approximately 25% of the grassland is cut to height 25cm.

6.4.9 It is important to regularly monitor the Site to ensure the grassland is not under or over grazed and stock density and duration altered accordingly to deliver the Target Condition specified in the HMMP submitted to discharge the Statutory Biodiversity Net Gain Condition. The stocking density should be reduced in wet periods or in conditions when poaching would lead to a break-up of the sward and colonisation by aggressive weed species.

6.4.10 The following indicators will be used to review and amend stocking densities:

- i) An increase in the amount of uneaten grass, the accumulation of litter, an increase in vigorous rank and unpalatable grasses, and a reduction in low growing herbs indicates stocking density is too low (increase density).
- ii) A reduction in density of plants, excessive poaching, weed invasion and the development of bare patches indicates stocking density is too high (reduce density).

6.4.11 Grazing is only to be undertaken by sheep. Cattle grazing is not proposed due to the damage this livestock may cause to the solar panel equipment.

6.4.12 Should the sward height become a problem, with plants starting to shade the lower levels of the panels, a strip of no more than 1 m wide can be cut at the base of the panel to shorten the sward height in this area. This cutting can occur at any time, in such cases cuts should reduce sward height to no lower than 200 mm to retain habitat for biodiversity.

## **6.5 Bat and Bird Box**

6.5.1 Bat and bird boxes shall be maintained in good condition throughout the operational life of the Development.



## 7.0 MANAGEMENT TABLES

7.1.1 The following tables provide work schedules for maintenance and management of all vegetation on Site. The first 5 years are covered by Table 5. Long-term management is shown in Table 6 and may be rolled forward over a 5-year period.

**Table 5 Establishment Management - Year 1-5**

| Management Activity                                                                                                                                                                          | J                                                                                                         | F | M | A | M | J | J | A | S | O | N | D |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|
| Site Wide                                                                                                                                                                                    |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Annual monitoring review                                                                                                                                                                     |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Selective herbicide treatment as necessary                                                                                                                                                   |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Woodland and Hedgerow Planting                                                                                                                                                               |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Check of planting stock, stakes, guards and mulch levels (re-firm, top-up mulch as required until year 5 or canopy has closed enough to inhibit weed growth; replace mulch mats if required) |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Replacement of plant failures to original specification; maintain minimum stocking rate of 98%                                                                                               |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Remove tree and shrub shelters if the girth of planting is over 40mm in diameter; all waste to be taken to a licensed tip off site.                                                          |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Pruning of established and new hedgerow                                                                                                                                                      |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Checking of gates and fencing to ensure stock-proof enclosure is maintained                                                                                                                  |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Watering                                                                                                                                                                                     | Water directly following planting, and as required to ensure establishment e.g. during periods of drought |   |   |   |   |   |   |   |   |   |   |   |
| Grassland                                                                                                                                                                                    |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Species Rich Grassland, including Wet Grassland                                                                                                                                              |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |
| Initial management of grassland areas (targeted herbicide treatment of perennial                                                                                                             |                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |

| Management Activity                                                                         | J | F | M | A | M | J | J | A | S | O | N | D |
|---------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| weeds or cutting/topping where necessary)                                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| First cut of grassland following sowing, to a height of 70-100mm                            |   |   |   |   |   |   |   |   |   |   |   |   |
| Summer hay cut to 40-75mm height; arisings left to dry for 5-7 days before removal off site |   |   |   |   |   |   |   |   |   |   |   |   |
| Autumn hay cut to a height of 40-75mm; carry out at least 2 cuts in autumn.                 |   |   |   |   |   |   |   |   |   |   |   |   |
| Spring cut to a height of 40-75mm in the first years of establishment                       |   |   |   |   |   |   |   |   |   |   |   |   |
| Pasture Grassland                                                                           |   |   |   |   |   |   |   |   |   |   |   |   |
| Grazing by sheep                                                                            |   |   |   |   |   |   |   |   |   |   |   |   |



**Table 6 Long-term Management - Year 5-40**

| Management Activity                                                                                                                                          | J | F | M | A | M | J | J | A | S | O | N | D |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Site Wide                                                                                                                                                    |   |   |   |   |   |   |   |   |   |   |   |   |
| Annual monitoring and management review                                                                                                                      |   |   |   |   |   |   |   |   |   |   |   |   |
| Selective herbicide treatment as necessary                                                                                                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Woodland, Shrub and Hedgerow including Linear Tree Belts                                                                                                     |   |   |   |   |   |   |   |   |   |   |   |   |
| Check of planting stock, stakes, guards and mulch levels (re-firm, top-up mulch as required until year 5 or canopy has closed enough to inhibit weed growth) |   |   |   |   |   |   |   |   |   |   |   |   |
| Rotational pruning of hedgerows to encourage bushy growth                                                                                                    |   |   |   |   |   |   |   |   |   |   |   |   |
| Pruning of established woodland to maintain the health of the trees and promote healthy growth, as required                                                  |   |   |   |   |   |   |   |   |   |   |   |   |
| Replacement of plant failures to original specification; maintain minimum stocking rate of 85% in year 5                                                     |   |   |   |   |   |   |   |   |   |   |   |   |
| Water directly following planting, and as required to ensure establishment e.g. during periods of drought                                                    |   |   |   |   |   |   |   |   |   |   |   |   |
| Checking of gates and fencing to ensure stock-proof enclosure is maintained                                                                                  |   |   |   |   |   |   |   |   |   |   |   |   |
| Species Rich Grassland                                                                                                                                       |   |   |   |   |   |   |   |   |   |   |   |   |
| Summer hay cut to 40-75mm height; arisings left to dry for 5-7 days before removal off site                                                                  |   |   |   |   |   |   |   |   |   |   |   |   |
| Autumn hay cut to a height of 40-75mm; carry out at least 2 cuts in autumn.                                                                                  |   |   |   |   |   |   |   |   |   |   |   |   |
| Spring cut to a height of 40-75mm in the first years of establishment                                                                                        |   |   |   |   |   |   |   |   |   |   |   |   |
| Species Rich Wet Grassland                                                                                                                                   |   |   |   |   |   |   |   |   |   |   |   |   |
| Annual autumn hay cut 50 ca. 50mm height                                                                                                                     |   |   |   |   |   |   |   |   |   |   |   |   |
| Optional Spring cut to 50mm height                                                                                                                           |   |   |   |   |   |   |   |   |   |   |   |   |
| Optional mowing or grazing to maintain ca. 50mm height through spring and winter                                                                             |   |   |   |   |   |   |   |   |   |   |   |   |

| Management Activity | J | F | M | A | M | J | J | A | S | O | N | D |
|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Grazing by sheep    |   |   |   |   |   |   |   |   |   |   |   |   |



## **8.0 MONITORING AND REVIEW**

### **8.1 General**

- 8.1.1 A Site inspection shall be undertaken every year during the summer to review management successes/failures gauged against the aims and objectives outlined in Section 2.0, and to make any adjustments to the management/maintenance regime that the findings of such inspections indicate would be appropriate.
- 8.1.2 Representatives from NHDC would be invited to attend the annual inspections with representatives of the Developer. Any modifications to management would be made in agreement with NHDC (or any successor body).
- 8.1.3 An Annual Aftercare Update report would be submitted to NHDC and would include details of any observations made during the Site inspection, other observations made during ongoing maintenance, results of all monitoring undertaken by the Developer, and any changes to management and maintenance operations agreed with NHDC. This allows for further detail regarding the management and restoration of the Site to be provided to NHDC, as and when such details become available.
- 8.1.4 Every 5 years, the LEMP would be updated to reflect any changes made as part of the ongoing management and maintenance operations. This would include the preparation of a new schedule or works to cover the subsequent 5-year period, as well as a summary of the Annual Update Reports for the previous 5 years.

### **8.2 Biodiversity Net Gain**

- 8.2.1 A walkover survey will be undertaken by a suitable experienced ecologist in Years 1, 2, and 5, and then every five years throughout the operational phase. In addition, a habitat survey and condition assessment of the Site will be undertaken to ensure created habitats are achieving their target condition as stated in the biodiversity metric calculations
- 8.2.2 Habitats will be monitored in accordance with the criteria set out within the Defra Biodiversity Metric Condition Assessment Guide. If habitats are not meeting the description for the particular habitat type, are not achieving the target condition, or appear unlikely to achieve it, a suitably qualified ecologist will be consulted to determine appropriate changes to management of the habitats on Site to ensure the proposed habitat types/targets condition are achieved. Suggestions for management



changes are outlined in the contingency measures section below, however the exact requirements will be dependent on the cause and extent of any failure.

### 8.3 Contingency Measures

8.3.1 If the monitoring outlined above identifies that a habitat is not meeting the target condition, or is not meeting the description for the proposed habitat type the following contingency measures should be considered.

8.3.2 In all cases, where a failure is identified the root cause should be identified and remedial measures implemented.

#### *Grasslands*

##### *Absence of herbs/ high cover of bare ground*

8.3.3 If the herb layer is not establishing, or there are large areas of bare ground it may be appropriate to re-seed the area. This should be done using a suitable mix and following the methodology outlined in the implementation programme submitted as part of Condition 19. It may be necessary to create batches of bare ground prior to seeding.

##### *Area is over-grazed*

8.3.4 Should the area become over grazed, indicated by a uniform and short grass sward, it may be appropriate to reduce the grazing density. This could be achieved either through the removal of animals or by grazing for a shorter period each year.

##### *Grasses are over-dominant*

8.3.5 Should grasses become over-dominant the grazing intensity may need to be increased. This could be achieved either through the introduction of more animals or grazing for an extended period.

8.3.6 Alternatively, it may be appropriate to overseed with yellow rattle to the grassland area, reducing competitive ability of grass species.

##### *Nutrient levels too high*

8.3.7 If nutrient levels are too high, resulting in lack of species diversity and indicated by the dominance of a small number of competitive species (e.g., nettles, spear thistle,



white clover, coarse grasses), efforts should be made to reduce the nutrient levels in the soils. Grazing should help reduce nutrient levels, however as an additional measure the grassland may be cut following flowering and setting of seed, with all arisings removed.

#### *Absence of bare ground*

- 8.3.8 Many herb species require patches of bare soil to germinate. If grazing animals are not adequately disturbing the soil, or in ungrazed areas if there are no localised bare patches, it may be appropriate to manually disturb the soil. This should be in no more than 5% of the total area.

#### *Hedgerows*

##### *High planting failure rate*

- 8.3.9 Small gaps should fill in naturally as neighbouring hedgerow shrub species grow, however where there is a high failure rate shrub species should be replanted or alternative species used. It may be appropriate to consider alternative planting methods, such as traditional hedgerow laying.
- 8.3.10 If due to failure or competition, there are found to be fewer than 5 different species per 30m length of hedgerow then additional infill planting should be undertaken in accordance with the methods outlined above. Infill planting should be of species not already present and designed to increase the number of different species.
- 8.3.11 Where high rates of climate-related failure have occurred, substitution with more resilient alternative species shall be considered.

##### *Not achieving species rich status*

- 8.3.12 If due to failure or competition there are found to be fewer than 5 different species per 30m length of hedgerow then additional infill planting should be undertaken in accordance with the methods outlined above. Infill planting should be of species not already present and designed to increase the number of different species.

#### *Woodland*

- 8.3.13 Any plants which fail during establishment will be replaced, in line with the planting specification and implementation programme submitted as part of Condition 19.



Where high rates of climate-related failure have occurred, substitution with more resilient alternative species shall be considered.

- 8.3.14 Should the woodland become overly dense with little light reaching understorey layers then selective thinning may be required. If not caught early it is also possible that understorey shrubs may need to be replanted, and/or the ground seeded with a shade tolerant flower mix.