Solar Farm north of Melksham Substation

on behalf of JBM Solar

Monitoring Strategy



avian ecology

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1 INTRODUCTION

1.1 Background

1.1.1 This Monitoring Strategy has been prepared to discharge condition 12 of planning permission (Reference: 20/06840/FUL) for the installation of a solar farm and battery storage facility with associated infrastructure including a cable connection (the 'Proposed Development') at land north of Melksham Substation, Wiltshire (the 'Site').

1.1.2 This document provides the management framework required for the planning and implementation of construction activities in accordance with the biodiversity commitments which have been identified at planning.

1.1.3 Condition 12; *No development shall commence on site until a Monitoring Strategy focused on the key aspects of the Biodiversity Mitigation and Enhancement Plan and Biodiversity Management Plan / Landscape and Ecological Management Plan has been submitted to, and approved in writing by, the Local Planning Authority. The Monitoring Strategy shall include, but not necessarily be limited to, the following information:*

a) Commitment to undertake surveys immediately following completion to a) establish how effectively the CEMP was followed and b) to fix the baseline for future monitoring.

b) Identification of the key features to be monitored and methodology to be used.

c) Monitoring targets with specific measurable thresholds for success for each key feature with remediation measures incorporated where necessary.

d) Commitment to continue monitoring for the operational lifetime of the installation in years 1, 3, 5, 10, 25 and 40. and the 5-year aftercare plan following completion of restoration.

e) Commitment to prepare a report after each monitoring exercise, relating findings to those of previous years and the intended targets. The report will be submitted to the Local Planning Authority within 6 months of each monitoring visit.

f) Details of the body or organisation responsible for implementation of the Monitoring Strategy.

The Monitoring Strategy shall be implemented in full in accordance with the approved details for the entire operational lifetime of the installation and the 5 year aftercare plan following completion of restoration.

REASON: The matter is required to be agreed with the Local Planning Authority in order that the development is undertaken in an acceptable manner, to ensure adequate protection, mitigation and compensation for protected species, priority species and priority habitats.

1.1.4 The Monitoring Strategy is to be read in conjunction with the Landscape and Ecology Management Plan (LEMP), Biodiversity Management Plan (BMP), Site Layout and Planting Plan Drawing no. P20-0137_09 Rev I and Biodiversity Mitigation and Enhancement Plan (BMEP)P20-0137_19_Rev C (or any plan superseded through other conditions or a S96A to the main Decision Notice) for the consented development.

1.1.5 Habitat enhancement measures and ongoing management practices are proposed in line with guidance produced by BRE guidance Biodiversity Guidance for Solar Developments (BRE, 2014[1]) that

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

will enhance and safeguard key habitats for the benefit of wildlife and enhance the ecological value of land currently under agricultural use.

1.1.6 BRE guidance: *Biodiversity Guidance for Solar Developments* (BRE, 2014) states that; '*with appropriate land management, solar farms have the potential to support wildlife and contribute to national biodiversity targets. Indeed, solar farms may have several additional advantages in that they are secure sites with little disturbance from humans and machinery once construction is complete. Recent research suggests biodiversity gains on solar farms can be significant'*.

1.1.7 Therefore, the site-specific approach provided within the LEMP, BMP and BMEP reports provides recommendations for long-term management of the land. This will be supported by this Mitigation Strategy with the aim to conserve and improve landscape habitat connectivity with the wider landscape for wildlife through protecting and enhancing potentially important wildlife corridors and habitats. This will contribute to the establishment of coherent ecological networks, supporting the biodiversity net-gain targets of the National Planning Policy Framework (NPPF, 2021).

1.2 Implementation of the Monitoring Strategy

1.2.1 The implementation of the Mitigation Strategy will be the responsibility of the operator, and owner either being the applicant or appointed contractor of the Site, working in conjunction with a suitably qualified (and where required licenced) ecologist.

1.2.2 The operator, and owner shall be responsible for the cost of monitoring and subsequent management changes and associated work, if required.

1.3 Site Overview

1.3.1 The Site comprises agricultural land with a combined area of approximately 96.32 ha (including land within which the proposed cable route will run, but which does not form part of the solar layout), located west of the village of Lacock, approximately 4 km south of Chippenham.

1.3.2 Habitats within the Site and immediately surrounding land in the wider survey area include arable, dense scrub, short-ephemeral/perennial, poor semi-improved grassland, tall ruderals, broadleaved woodland, species-rich and species-poor hedgerows, ponds, ditches and scattered trees within field boundary hedgerows. In the wider context the Site is surrounded by further extensive areas of arable farmland and scattered pockets of deciduous woodland.

2 MONITORING AND CONTINGENCY MEASURES

2.1 Timings

2.1.1 The development of the biodiversity interest of the Site will be monitored over time by a suitably experienced ecologist to a timetable agreed as part of the detailed phasing programme for the Proposed Development. A walkover survey will be undertaken within the optimal botanical survey period (April to September) immediately following completion of the CEMP, on years 1, 3, 5, 10, 25 and 40 and the 5-year aftercare plan following restoration (further specific phasing details to be provided within the LEMP). This will involve an inspection of the grassland, hedgerows and trees to ensure that they are being managed in a manner suitable for the enhancement of wildlife interest. Wildlife boxes will also be checked, under licence, where necessary.

2.1.2 In addition, a habitat survey and condition assessment of the landscape and habitat creation areas will be undertaken to ensure created habitats are achieving their target condition as stated in the biodiversity metric calculations.

2.1.3 The results of these monitoring surveys will be submitted in a report to the LPA (within 6 months of completion of the survey) and will be used to inform future changes in management and the need, or otherwise, to replace missing wildlife boxes. The management regime will be amended, if necessary, based on the monitoring recommendations in order to maintain progress towards target conditions.

2.1.4 All monitoring will be completed by suitably qualified and experienced ecologists.

2.2 Monitoring Criteria

2.2.1 Habitats will be monitored in accordance with the criteria set out with the Biodiversity Metric 3.1 Technical Supplement[2]. Habitats are expected to achieve the conditions set out in the Biodiversity Metric 3.1 Calculation Tool submitted as part of the Planning Application. **Table 2.1** below details the habitat creation within the Site and how the habitats are expected to reach the target conditions.

Table 2.1 Habitat Creation and Target Conditions

Landscape Habitat	Metric Habitat	Target Condition	Time to target condition (years)
Solar Park Long Term Grazing Mix (within the security fence).	Modified Grassland	Fairly Poor	2
Emorsgate EM2 – Standard General Purpose Meadow Mixture (outside the security fence).	Modified Grassland	Good	7

[2] Biodiversity Metric 3.1 – Technical Supplement.
http://publications.naturalengland.org.uk/publication/6049804846366720

Winter Bird Feed Area.	Arable field margins game bird mix (best fit at the time)	N/A	1
Native species rich hedgerow	Native Species Rich Hedgerow	Moderate	5

2.2.2 If habitats are not meeting the description for the particular habitat type, are not achieving the target condition, or appear unlikely to achieve it within the timeframe, a suitably qualified ecologist will be consulted to determine appropriate changes to the management to enable to the proposed habitat type and/ or target condition to be 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.

2.2.3 If it is considered it is not possible to achieve either the proposed habitat type or target condition the biodiversity calculator will be revised and the results submitted to the local planning authority with a report detailing the reasons why habitats have not achieved the condition stated, steps taken to rectify this and any additional compensation measures as appropriate.

2.3 Monitoring Procedures

2.3.1 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.

Table 5.1: Monitoring Procedures and Key Indicators.

Biodiversity Feature	Monitoring Procedure	Key Negative Indicators
Hedgerows	• Walk full length of planted and infilled hedgerows (within areas of accessible public open space). • Monitor if cutting regimes are being implemented.	• Damaged/dead whips/planted trees. • Significant weed growth competition. • Unofficial hedgerow gaps created by 'push throughs'. • Damaged or unnecessary planting guards. • Planting impacted by drought.
Trees	• Visually check all planted trees (within areas of accessible public open space)	• Damage to wire mesh tree guards and stakes/ties. • Dead or damaged plants. • Excessive competition from perennial weed species around the base of trees. • Maintenance damage. • Planting impacted by drought.
Grassland habitats	• Walkover of all retained and created grassland areas. • Monitor if cutting regimes are being implemented.	• Accumulation of cuttings from previous cuts not being collected. • Dense grassland with layer of thatch developing, dominated by a small amount of vigorous rank and unpalatable grasses – indicates need to increase cutting regime. • Reduction in density of plants or plant species present compared to original baseline surveys, which Indicates the need to amend cutting regime. • Excessive invasion of unwanted perennial weeds (docks, thistles, nettles).
Invasive plant species	• Visually check any areas of infestation that have been subject to removal/treatment. • Walkover of Site.	• Failed eradication/treatment methods/spread of invasive species. • New areas of infestation. • New invasive species recorded.
Wildlife boxes	• Externally inspect each box (within areas of accessible public open space). • Internally inspect each box (excluding integrated boxes) every five years.	• Damaged, dilapidated, or missing boxes. • Build-up of debris.

2.4 Contingency Measures

2.4.1 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 will be considered.

Grasslands

Absence of herbs/ high cover of bare ground

2.4.2 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 outline in the habitat creation section above. It may be necessary to create batches of bare ground prior to seeding.

Area is over-managed

2.4.3 Should the area become over managed, as will be indicated by a uniform and short grass sward, it may be appropriate to reduce the mowing regime.

Grasses are over-dominant

2.4.4 Should grasses become over-dominant the management intensity may need to be increased. This could be achieved either through the introduction of an early spring (February) cut or an additional late summer/ autumn cut.

2.4.5 Alternatively, it may be appropriate to introduce yellow rattle to the grassland area. This plant parasitises grasses, reducing their competitive ability.

Nutrient levels too high

2.4.6 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. A cut and collect regime is likely to achieve this over time.

2.4.7 Cut and collect involves waiting for plants to reach a substantial height before mowing and then removing all arisings form the Site. Any nutrients taken in by the plants during growth will therefore be removed from the site. This method may take a number of years to be effective.

Absence of bare ground

2.4.8 Many herb species require patches of bare soil to germinate. If areas of bare ground are not naturally occurring it may be appropriate to periodically manually disturb the soil. This should be in in no more than 5% of the total area.

Hedgerows and Trees

High failure rate/hedgerows too thin (gappy)

2.4.9 Should a high failure rate be observed it may be appropriate to identify alternative tree species better suited for the conditions for example if diseased or dying trees have been identified. The choice of species should be made in consultation with a suitably qualified ecologist and/ or landscape architect and planted in accordance with the method outlined above.

2.4.10 Should the issue be caused by either excessive browsing of young seedlings by deer or other pests, it may be appropriate to provide tree guards or fence areas of hedgerow to exclude deer, rabbit and other browsing species.

2.4.11 If failure is due to a lack of mature seed producing specimens, it may be appropriate to wait for a number of years to see if they will establish. Otherwise, manual planting of seedlings should be undertaken in accordance with the methodology described above.

3 INDICATIVE MONITORING SCHEDULE

3.1.1 The following monitoring programme shows possible months in which habitat monitoring activities should be undertaken.

Initial Habitat Creation and Enhancement Year 1

Management Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Initial monitoring visit following completion to determine site baseline conditions				✓	✓	✓	✓	✓	✓			
Habitat monitoring in years 3, 5, 10, 25 and 40.				✓	✓	✓	✓	✓	✓			
External monitoring of wildlife boxes in years 3, 5, 10, 25 and 40.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Internal monitoring of wildlife boxes in years 5, 10, 25 and 40	✓	✓								✓*	✓	✓

3.1.2 Details relating to management and schedules relating to this can be found within the LEMP, BMP and BMEP.