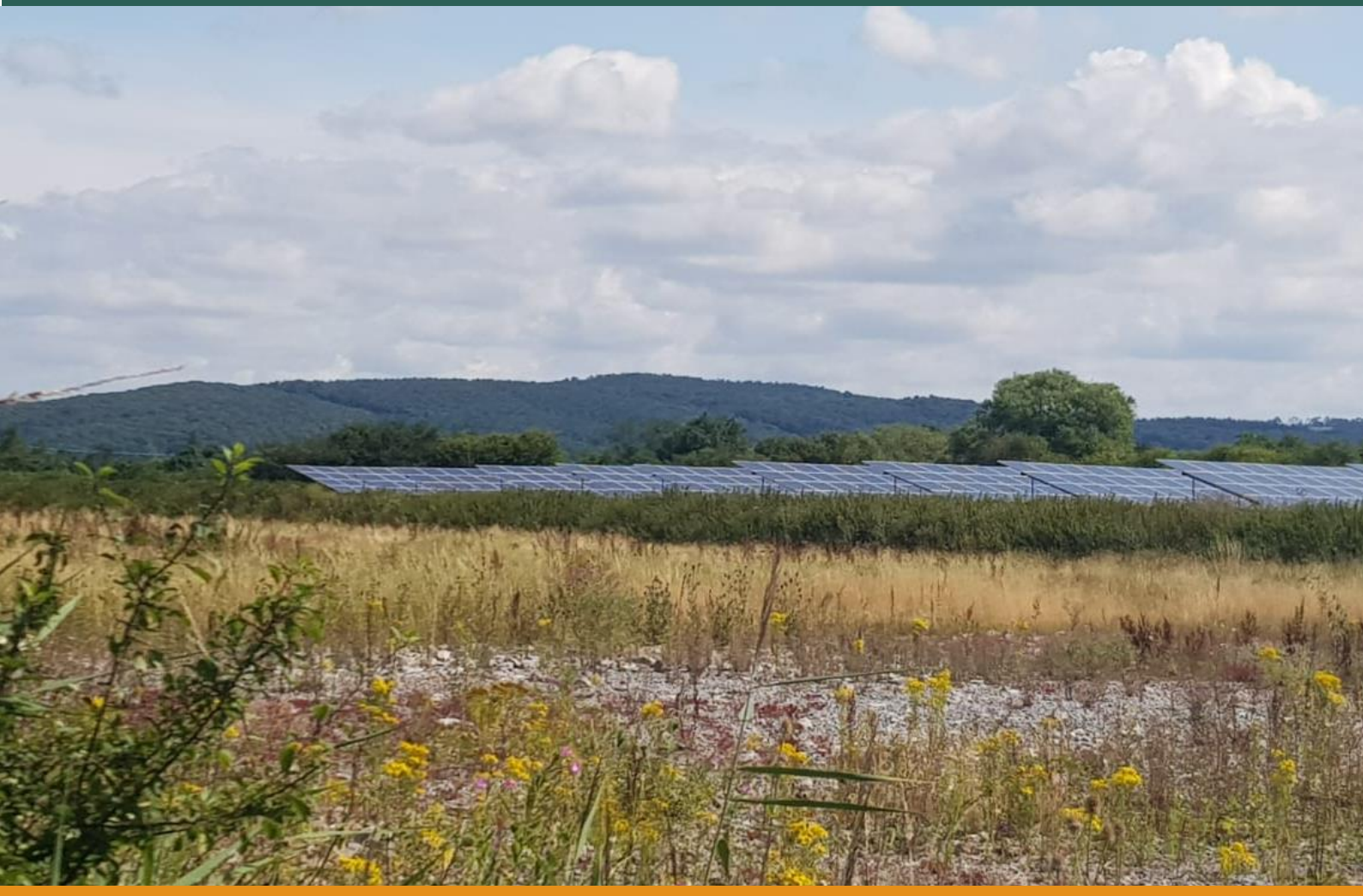
SUNNICA ENERGY FARM

Preliminary Environmental Information Report

Appendix 10I: Outline Landscape and Ecology Management Plan

Sunnica Ltd

AUGUST 2020



Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
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1 Outline Landscape and Ecology Management Plan

1.1 Introduction

1.1.1 This draft Outline Landscape and Ecology Management Plan (OLEMP) has been prepared on behalf of Sunnica Limited (hereafter referred to as the Applicant). It forms part of the Preliminary Environmental Information Report (PEI Report) and includes provision for the successful establishment and future management of biodiversity and landscaping works.

1.1.2 The Applicant is seeking development consent, under a Development Consent Order (DCO), for the construction, operation (including maintenance) and decommissioning of a solar farm. The Scheme is described in Chapter 3: Scheme Description (PEI Report Volume I).

1.1.3 The Proposed Development falls within the definition of a 'Nationally Significant Infrastructure Project' (NSIP) under Section 14(1)(a) and Sections 15(1) and (2) of the 2008 Act, as it would have a generating capacity greater than 50MW electrical output (50MWe). As such, a DCO is required to authorise the Scheme in accordance with Section 31 of the 2008 Act.

1.1.4 This draft OLEMP provides a framework for achieving the 'vision' of the Environmental Masterplan, as illustrated on Figure 10-14a, appended to this report.

1.1.5 The Scheme is set within a landscape consisting of ecological designations, 'pine lines', geometric fields and areas of mature woodlands. The OLEMP forms part of the strategy for successfully integrating the Scheme within this landscape, and also mitigating many of the related impacts identified within the PEI Report.

1.1.6 The draft OLEMP has been prepared based upon the information available as of August 2020 and will be reviewed and updated for the DCO Submission.

1.2 The DCO Site

1.2.1 With reference to Figure 3-1 and 3-2 and Chapter 3, the DCO Site comprises the following areas:

Sunnica East Site A

1.2.2 With reference to Figure 3-1, the Sunnica East Site A extends to the west of Ferry Lane and covers 222.4 hectares.

1.2.3 The landform across the Sunnica East Site A is predominantly 'flat', situated at around 10m AOD.

1.2.4 The Sunnica East Site A does not cover any of the settlements in the study areas described in chapter 10 of the PEI Report. Isleham is approximately

0.4km to the north-west and Freckenham is approximately 0.6km to the south of Sunnica East Site A, at its closest point.

1.2.5 The land use across the Sunnica East Site is agricultural, based around Lee Farm, with either arable or pig farming land uses, consisting of large scale fields which are open in character.

1.2.6 The Sunnica East Site A is crossed by one public right of way (PRoW), a footpath, W-257/007/7, W-257/002/X and W-257/002/0 which cross the eastern edge of E07, between Beck Road and Mortimer Lane.

1.2.7 As set out above, the Sunnica East Site A is not covered by any statutory landscape designations, neither is it covered by any Conservation Areas and nor does it contain any listed buildings.

Sunnica East Site B

1.2.8 With reference to Figure 3-1, the Sunnica East Site B extends to the east of Freckenham Road and to the south of Elms Road and covers 322.7 hectares

1.2.9 The landform across Sunnica East Site B is generally flat, although there is also localised variation at the north-east edge, where the landform adjacent to the A11 rises up to 20m AOD, across the lower slopes of Chalk Hill.

1.2.10 The Sunnica East Site B does not cover any of the settlements in the study areas described in chapter 10 of the PEI Report, although borders the southern and eastern edges of Worlington. Red Lodge is approximately 0.4km to the east and Badlingham is approximately 0.5km to the south-west.

1.2.11 The land use across the Sunnica East Site B is predominantly agricultural, as either arable of pig farming. The field pattern is a combination of large to smaller scale fields, which are generally geometric or planned in form. Whilst the fields themselves are open in character, the intervening pine lines or hedgerows along the boundaries of the fields results in a wooded context to the Sunnica East Site B.

1.2.12 The Sunnica East Site B is crossed by the following PRoW:

- U6006 extends from Elms Road to Worlington, across the eastern part of the Sunnica East Site.
- PRoW (footpath) W-257/003/0 forms the southern edge to the Sunnica East Site B, to the south of E19 and E22.

1.2.13 As set out above, the Sunnica East Site B is not covered by any statutory landscape designations; neither is it covered by any Conservation Areas, nor does it contain any listed buildings.

Sunnica West Site A

1.2.14 With reference to Figure 3-2, the Sunnica West Site A is in the central part of the study area, to the north-east of Newmarket and covers 459.8 hectares.

1.2.15 The Gallops forms the western boundary to the Sunnica West Site A. Fields, woodland blocks, Chippenham Park and the B1085 form the northern boundary; fields to the west of Kennett form the eastern boundary and the A14 forms the southern boundary.

1.2.16 There are two unnamed watercourses which flow across the Sunnica West Site A. The first, flows across around the edge of Chippenham Park and across the northern part of the Sunnica West Site A. The second flows between the A11 and The Willows, to the south of Dane Hill Farm, via Halfmoon Plantation.

1.2.17 The landform across the Sunnica West Site A is gently undulating. At the western edge of the Sunnica West Site A the landform rises from the A14, at 30m AOD, to a localised hill at 40m AOD before falling back to Chippenham Road at 35m AOD. In contrast, the landform falls very gradually across the central part of the Sunnica West Site A, from the junction of the A14 and A11 at 25m AOD, to the edge of Chippenham Park, at 20m AOD. Similarly, in the eastern part of the Sunnica West Site A, the landform falls from La Hogue Farm, at 30m AOD, northwards towards the unnamed stream bordering Chippenham Park at 20m AOD, whilst remaining generally flat across Dane Hill and Halfmoon Plantation to the south, at 30m AOD.

1.2.18 The Sunnica West Site A does not directly cover or border any settlements. Chippenham is approximately 1.5km to the north of the northern part of the Sunnica West Site A; Kennett is approximately 0.8km to the east of the eastern part of the Sunnica West Site A and the eastern edge of Newmarket is approximately 1.5km to the south-west of the Sunnica West A Site.

1.2.19 Part of the B1085 forms the northern edge of the main part of the Sunnica West Site A. The A11 separates the eastern part of the Sunnica West Site A. Chippenham Road and Golf Links Road form the north-west and north-east boundaries of the Sunnica West A Site respectively.

1.2.20 The land use across the Sunnica West A Site is agricultural, consisting of small to medium scale fields. The field pattern to the north of the A14 is more geometric than the fields to the south of the A11. There are several small wooded plantations and woodland belts within the fields.

1.2.21 The agricultural fields are bounded by trees, managed hedgerows, linear tree shelter belts, small woodland and copses and farm access tracks.

Sunnica West Site B

1.2.22 The Sunnica West Site B is also located in the central part of the study area, approximately 1.4km to the north-west of the Sunnica West Site A and to the north of Snailwell. The Sunnica West Site B covers 68.8 ha and the land use is agricultural.

1.2.23 Mature woodland, extending from Chippenham Fen forms the northern boundary to the Sunnica West Site B. Fields, including grassland, form the eastern boundary, part of Snailwell Road forms the southern boundary and a woodland block and the Horseracing Forensic Laboratory form the western boundary. There are areas of small woodland and copses, farm access tracks and irrigation ditches fed by the River Snail which flows along the western and southern edges of the Sunnica West Site B, to flow under Snailwell Road. The landform rises from the River Snail to the eastern edge of the Sunnica West Site B, at 15m AOD.

1.2.24 The Sunnica West Site B does not cover any settlements and is located to the north of a trout farm and Snailwell Business Park.

1.2.25 Snailwell Road forms part of the southern boundary to the Sunnica West Site B, extending from the A142 to Snailwell.

Cable Route A

1.2.26 Cable Route A is located between the Sunnica East Sites A and B and the southern edge of the Sunnica East Site B and the north-east edge of the Sunnica West Site A.

1.2.27 From parcel E22, as the southern edge of the Sunnica East Site B, the cable route crosses part of the River Kennett, to extend between Heath Plantation and Long Slip woodland, to connect with parcel W13, at the northern edge of Sunnica West Site A.

1.2.28 The landform across Cable Route A is generally flat, at around 20m AOD. To the north of Heath Planation, the landform falls gradually to the River Kennet at 15m AOD, before rising back towards 18m AOD at field E22.

1.2.29 Cable Route A does not cross any settlements. The B1085 crosses the southern edge of Cable Route A and is the only road along the route.

1.2.30 Cable Route A does not cross any designated landscapes.

Cable Route B

1.2.31 Cable Route B extends from the north-west edge of the Sunnica West Site A to Sunnica West Site B and from the western edge of Sunnica West Site B to Burwell sub-station.

1.2.32 From parcel W03, at the north-west edge of Sunnica West Site A, Cable Route A crosses the western edge of Foxburrow Plantation, part of Chippenham Road and a vegetated track to W02, within Sunnica West Site B.

1.2.33 Across this part of Cable Route B, the landform rises across the fields, from the edge of Sunnica West Site A, at 20m AOD to Chippenham Road at 25m AOD. From Chippenham Road, the landform falls gradually towards Sunnica West Site B, at 20m AOD.

1.2.34 This part of Cable Route B does not cross any settlements and is located approximately 1km to the east of Snailwell. The land use across this part of Cable Route B is agricultural, consisting of varying field sizes, which are open in character and bordered by woodland and hedgerows.

1.2.35 Cable Route B crosses a small part of the Horseracing Forensic Laboratory, Newmarket railway line and the A142, extending to the north of Landwade, across West Fen and to the west of Burwell. Similarly, this part of Cable Route B does not cover any settlements and crosses a predominantly agricultural landscape, with large scale fields and watercourse (Lodes) across West Fen. Cable Route B is not covered by any statutory landscape designations.

Burwell National Grid Substation Extension

1.2.36 The Burwell National Grid Sub-station Extension is located adjacent to the existing Burwell substation. The area consists of grass and is bound by

trees. The substation consists of a range of tall electrical equipment, which connects to overhead pylons. The Burwell National Grid Sub-station Extension is not covered by any statutory landscape designations.

1.3 The Scheme

1.3.1 The Proposed Development is described in further detail in the PEI Report ***Chapter 3: Scheme Description***.

2 Purpose of this Document

2.1.1 The purpose of this OLEMP is to set out the measures proposed to mitigate the effects of the Scheme on landscape and biodiversity features, and to enhance the biodiversity, landscape and green infrastructure value of the DCO Site, to secure compliance with relevant national and local planning policies.

2.1.2 The Scheme has been designed, as far as is practicable, to avoid or reduce effects on landscape, heritage and biodiversity features through siting of the Scheme components, including structures and new planting. These include measures to avoid impacts on protected species to ensure compliance with legislation (see ***Chapter 8: Ecology*** and ***Chapter 10: Landscape and Visual Impact Assessment***).

2.1.3 This document outlines the landscape and biodiversity impact avoidance measures that would be implemented prior to, and during, construction of the Scheme, as well as the habitat restoration, enhancement, management and monitoring measures to be implemented once the Scheme is operational. Implementation of these measures is proposed to be secured by a Requirement of the draft DCO through the requirement for detailed Landscape and Ecology Management Plan(s) to be produced in accordance with the Outline LEMP that will be submitted with the application.

2.1.4 In order to avoid potential conflicts in approach to impact avoidance and enhancement, this document identifies the measures required for both landscape, heritage and biodiversity together, to demonstrate a cohesive strategy.

2.1.5 This draft OLEMP is structured as follows:

- **Chapter 2** sets out the Scheme Vision;
- **Chapter 3** summarises relevant legislation and planning policy;
- **Chapter 4** describes the existing landscape, heritage and biodiversity features and the potential impacts and effects of the Scheme;
- **Chapter 5** outlines the requirements for impact avoidance, both during advance works and during the construction phase;
- **Chapter 6** describes the proposals for landscape and biodiversity enhancement and the measures required for their effective management and maintenance. The areas of the DCO Site to which the different proposals would be applied are illustrated in **Figure 10-14a**, appended to this document; and
- **Chapter 7** describes the roles and responsibilities of all parties involved in the delivery of the mitigation, enhancement and management proposals.

3 Scheme Vision

3.1.1 The Scheme offers the opportunity to increase Green Infrastructure across the DCO Site, reflecting valued landscape characteristics which would aid in integrating the Scheme within the landscape.

3.1.2 This draft OLEMP has been developed to ensure that the Scheme would reflect the existing landscape character and context, whilst accommodating mitigation principles established within the PEI Report, so as to achieve the vision of:

"The Scheme will deliver a new network of environmental features which will also deliver a range of ecosystem services, incorporating biodiversity, heritage, landscape and access."

3.1.3 The overarching objectives of the draft OLEMP are to:

- promote the conservation, protection and improvement of the physical, natural and historic environment across the DCO Site and its setting, and to ensure the Scheme is appropriately sited, softened and integrated. The landscape framework should be seen as part of the essential infrastructure of the Scheme.
- diversify ecological value through the retention of the existing hedgerows and trees, to enhance these through restoration and creation of diverse habitats offering greater botanical and faunal interest to the Scheme, and to safeguard the habitats with potential for protected species.
- ensure the design and maintenance of landscape and biodiversity components preserves and enhances the character of the landscape and local distinctiveness.
- protect and retain, where practicable, the hedgerows and trees which cross the Scheme boundary, particularly adjacent to the road networks.
- create new structural planting which links with existing habitats and to take account of species that are locally appropriate and the existing vegetation patterns.
- use native indigenous species of local provenance wherever appropriate.
- provide landscape amenity enhancement through the introduction or permissive routes.
- provide a variety of foraging, nesting and roosting opportunities for protected and notable species, including bats, badgers, invertebrates, amphibians, reptiles and birds.
- create floristically rich habitats, to support a greater assemblage of species and give rise to enhanced foraging opportunities.
- provide a framework for monitoring and reviewing the landscape implementation and establishment.

- ensure the mitigation proposed as part of the Scheme remains effective at reducing identified environmental effects as intended.

3.1.4 The contractor appointed by the Applicant to deliver the Scheme, shall deliver each of the draft OLEMP measures and commitments through the LEMP(s) that are developed for the Scheme, unless the contractor is able to define an alternative measure, or measures, which achieve the same landscape and biodiversity effects at the relevant location.

3.1.5 The assumption is that the decommissioning phase would be covered by a Decommissioning Environment Management Plan which would be submitted at a later time in the project timeline. Decommissioning matters are therefore not addressed in this draft OLEMP.

4 Legislative and Policy Framework

4.1.1 The legislation and policies relevant to biodiversity, landscape and visual amenity are summarised below.

4.1 Legislation

- Ancient Monuments and Archaeological Areas Act 1979 (Ref. 7-5) (amended by the National Heritage Act 1983 (Ref. 7-6) and 2002 (Ref. 7-7)) (excluding normal planning procedures, which are disapplied by the DCO, which if granted, would encompass all of the normal consents);
- Planning (Listed Buildings and Conservation Areas) Act 1990 (Ref. 7-4) (excluding normal planning procedures, which are disapplied by the DCO, which if granted, would encompass all of the normal consents);
- Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended) (Birds Directive);
- Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act (WCA) 1981 (as amended);
- Countryside & Rights of Way Act 2000 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
- Protection of Badgers Act 1992 (as amended);
- Hedgerow Regulations 1997 (as amended);
- Water Environment (Water Framework Directive) (England and Wales) Regulations 2017; and
- Animal Welfare Act 2006.

4.2 Planning Policy

- Overarching National Policy Statement for Energy (EN1), adopted 2011;
- NPS for Electricity Networks Infrastructure (EN5), adopted 2011;
- National Planning Policy Framework (NPPF), adopted 2019;
- National Planning Practice Guidance (NPPG);
- Cambridgeshire and Peterborough Minerals and Waste Development Plan, adopted 2011;
- Cambridgeshire and Peterborough Minerals and Waste Local Plan, Further Consultation Draft (FCD), March 2019;
- Suffolk – Creating the Greenest Country – Suffolk Climate Change Partnership;
- Suffolk Climate Action Plan 3 (SCAP), 2017;

- East Cambridgeshire Local Plan (ECLP), 2015;
- East Cambridgeshire District Council Renewable Energy Development (Commercial Scale) Supplementary Planning Document, (EC RED), 2014;
- East Cambridgeshire District Council Design Guide (EC DG), SPD, 2012
- The West Suffolk, Forest Heath and St Edmundsbury Local Plan, Joint Development, Management Policies Document (WS MPD), 2015;
- Forest Heath Local Development Framework, Core Strategy Development Plan Document (FH CS), adopted 2010;
- Forest Heath District Council, Accessible Natural Greenspace Study (FH NGS), 2017

4.3 Other Guidance

- Natural England National Character Area (NCA) 46: The Fens;
- Natural England NCA 85: The Brecks;
- Natural England NCA 87: East Anglian Chalk;
- East of England Landscape Framework;
- Suffolk Landscape Character Assessment;
- Cambridgeshire Landscape Guidelines (CLG);
- Norfolk and Suffolk Brecks Landscape Character Assessment (NSB LCA);
- Cambridgeshire Green Infrastructure Strategy;
- The Brecks' Special Qualities (BSQ);
- Village Design Guides and Conservation Area Statements;
- Cambridgeshire and Peterborough Biodiversity Action Plan;
- Suffolk Biodiversity Action Plan;
- Biodiversity 2020 - A strategy for England's Wildlife and Ecosystem Services;
- Priority habitats and species listed on UK Post 2010 Biodiversity Framework which succeeds the UK Biodiversity Action Plan (UK BAP) (Joint Nature Conservation Committee (JNCC) and Defra, 2018);
- BRE's National Solar Centre Biodiversity Guidance for Solar Developments;
- Planning Practice Guidance, Conserving and enhancing the historic environment;
- Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Historic England;
- Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets. Historic England (2nd edition, 2017);

- Historic England Advice Note 12 Statements of Heritage Significance: Analysing Significance in Heritage Assets (2019); and
- Chartered Institute for Archaeologists, Code of Conduct and Standards and Guidance for Historic Environment Desk-based Assessment.

4.4 Biodiversity Net Gain

4.4.1 It is government policy in National Policy Statement EN1 that development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design and that such opportunities in and around developments should be maximised where appropriate and, in the National Planning Policy Framework 2019, that planning decisions should minimise impacts on and provide net gain for biodiversity. In addition, the Environment Bill, published by the UK government in October 2019 and reintroduced into parliament (January 2020), includes proposals to make Biodiversity Net Gain (BNG) a mandatory requirement within the town and country planning system in England. Once enshrined in law it will require all town and country developments to achieve a 10% net gain in biodiversity units relative to the Scheme's baseline biodiversity. Although the Bill does not currently seek to apply this requirement to infrastructure planning decisions, this policy position of UK Government has been taken into account in developing the BNG provided for across and by the Scheme.

5 Existing Landscape, Heritage and Biodiversity Features

5.1.1 The following section summarises the baseline analysis within ***Chapter 10: Landscape and Visual Impact Assessment***. This is to facilitate the management measures being read in the context of the existing baseline and in one single document.

5.2 Existing Landscape and Heritage Features

Sunnica East Site A Site Level Landscape Character

5.2.1 To provide additional detail to the landscape character and land use within the Sunnica East Site and with reference to Figure 3-1, parts of the Sunnica East Site have been divided into the following parcel references (E):

- E01 to E04 are in the north-west of the Sunnica East Site A. The Fen woodland forms the northern boundary and the reservoirs and access track at Lee Farm form the southern boundary. The Lee Brook forms the western boundary and an intermittent hedgerow tree group form the eastern boundary. The fields are open in character with hedgerows between E03 and E04;
- E05 forms the north-west part of the Sunnica East Site A, between Beck Road and the Lee Brook. E05 consisting of several fields which are open in character. There are a few individual trees along the southern edge of E05, adjacent to Beck Road and a small woodland block adjacent to the Lee Brook in the south-east part of E05;
- E06 to E07 form the west part of the Sunnica East Site A, located to the south of Beck Road, between the dismantled railway line and to the south of Beck Bridge. The fields are open in character, although the northern and western edges of E06 are bordered by intermittent hedgerows. PRoW (footpath) W-257/007/7, W-257/002/X and W-257/002/0 crosses the eastern edge of E07, crossing between Beck Bridge and Mortimer Lane;
- E08 to E10 are in the north-west of the Sunnica East Site A, to the south of E03 and E04 and reservoirs and access track to Lee Farm. Ferry Lane forms the eastern boundary to E08 and E10, with Beck Road forming the southern boundary to E09 and E10. The elevated junction of Beck Road and Ferry Lane forms the south-east boundary to E10. The fields are open in character, although there is a hedgerow along the southern edge of fields E09 and E10 and hedgerows and trees along the eastern edge of E10, which extend to a small woodland block bordering the elevated junction of Beck Road and Ferry Lane; and
- E33 is located to between the reservoirs at Lee Farm and Ferry Lane and is contiguous with E04, which forms the northern boundary and E08 which forms the southern boundary.

5.2.2 With reference to the ***High Level Tree Constraints Report*** (Appendix 10-2) Ferry Lane, between Freckenham and West Row, is bordered by mature woodland on the east side of the lane at the junction with the B1102. From

Freckenham, both sides of the lane are bordered by hedgerows, which extend into a row of mature trees. To the north of these trees, the vegetation patterns return to hedgerows, with some gaps and taller scrub and young trees at the elevated junction with Beck Road. To the north of the junction the lane is bordered by hedgerows, until the junction with the access road to the reservoirs by Lee Farm, where the lane to West Row is bordered by intermittent hedgerows and mature trees including Scots pine, particularly along the eastern side of the lane.

5.2.3 There are no scheduled monuments nor listed buildings within the Sunnica East Site A. There are no registered parks and gardens within the Sunnica East Site A or within 1km from this part of the DCO Site. Sunnica East Site A is not covered any Conservation Areas, there are two conservation areas that fall within the 1km, with the Freckenham Conservation Area and Isleham Conservation Area.

Sunnica East Site B Site Level Landscape Character

5.2.4 To provide additional detail to the landscape character and land use within the Sunnica East Site and with reference to Figure 3-1, parts of the Sunnica East Site have been divided into the following parcel references (E):

- E11 and E12 are located in the western part of the Sunnica East Site B, between the B1102 and U6006. The fields are open in character and bordered to the east by pig farming and Surprise Hill woodland and residential properties to the north, adjacent to the B1102;
- E13 to E18 are to the east of U6006, extending to Elms Road, which forms the southern boundary to E16 and E18. The eastern boundary to E13-E18 consists of fields and woodland blocks, including mature woodland around Worlington Quarry. The fields within E13-E18 are small in scale, rectangular in form and divided by mature tree belts;
- E19 to E22 are to the south of Elms Road, forming the southern part of the Sunnica East Site B. Similar to E13 to E18, the fields are smaller in scale, rectangular in form and divided by mature tree belts, including Scots pine and a small reservoir. Residential land uses adjacent to Bridge End Road form the eastern boundary to E19 to E22, with PRoW (footpath) W-257/003/0 forming the southern boundary to E19 and E22;
- E23 is a small parcel of land which is open in character, located between E11 and to the north of U6006;
- E24 to E25 are two larger scale fields to the west of Newmarket Road. Both fields are open in character and divided by a vegetated access track to pig farms and woodland belts which form the western boundary;
- E26 to E29 are four fields to the east of Worlington Road at the north-east part of the Sunnica East Site B. Each field is broadly the same, being small in scale and square in form. E26 to E29 are divided by mature vegetation such that they are well enclosed in relation to the wider landscape. There is small mature tree clump within the central part of E29; and
- E30 to E32 form the north-east part of the Sunnica East Site B, located to the south of Golf Links Road and with the A11 forming the eastern boundary. A rectangular block of mature woodland forms the southern

boundary to E30 and E32, across the rising ground at the base of Chalk Hill. E30 is rectangular in form and divided from E31 and E32 by a narrow tree belt, with all parcels open in character.

5.2.5 With reference to the ***High Level Tree Constraints Report*** (Appendix 10B), the main tree species within the Sunnica East Site B include hybrid Black Poplar (*Populus × canadensis*), White Poplar (*Populus alba*), Oak (a species of *Quercus*), Scots Pine (*Pinus sylvestris*), Beech (*Fagus sylvatica*) and Corsican Pine (*Pinus nigra*).

5.2.6 Across the southern part of the Sunnica East Site B there are several semi mature pine plantations and a large linear groups of pine and poplar which denote field boundaries. These groups also contain a number of large broadleaf woodlands, consisting of predominantly Oak and Beech mixed with occasional Pine. There are no likely veteran or ancient trees within the Sunnica East Site B.

5.2.7 There are no scheduled monuments, nor listed buildings within the Sunnica East Site B. There are no registered parks and gardens within the Sunnica East Site B or within 1km from this part of the DCO Site. Sunnica East Site B is not covered any Conservation Areas.

Sunnica West Site A Site Level Landscape Character

5.2.8 To provide additional detail to the landscape character and land use within the Sunnica West Site A and with reference to Figure 3-1, parts of the Sunnica West Site A have been divided into the following parcel references (W):

- W03 forms the north-west part of the Sunnica West Site A, situated between the Gallops and Foxborrow Plantation. W03 consists of four small square fields, situated across the relatively elevated and rising land to the south-east of Snailwell. The fields are open in character due to the land use, but the fields are bordered by woodland blocks along the western and southern edges and a narrow tree belt along the eastern edge which connects with Foxburrow Plantation.
- W04 and W05 form the western part of the Sunnica West Site A and are adjacent to The Avenue. Both W04 and W05 are geometric in form and open in character due to their land use, although there is a mature woodland belt along the western edge of W04, through which a PRoW crosses;
- W06 to W12 are located centrally within the Sunnica West Site A and consist of smaller scale geometric fields divided by hedgerows. Sounds Plantation extends between W06 and W07 and there is also a rectangular woodland block between W08 and W10. La Hogue Road crosses the eastern edge of W10, W11 and W12;
- W13 to W14 form the north-east part of the Sunnica West Site A, extending between Chippenham Park and the A11, adjacent to the south side of the B1085;
- W15 to W16 form the eastern part of the Sunnica West Site A, between the A11 and A14. W15 consists of several fields, which are open in

character, whereas W16 is a single smalls scale field, situated between Dane Hill Farm and Half Moon Plantation; and

- W17 is a rectangular field in the central part of the study area, situated in the centre of W06 to W12. The field is open in character and bordered by hedgerows and tree belts, with Sounds Plantation forming the western boundary. There are also several agricultural barns adjacent to the southern edge of W17 and W17 is crossed by telegraph poles.

5.2.9 With reference to the ***High Level Tree Constraints Report*** (Appendix 10B), the trees within the Sunnica West Site A are semi mature to mature in age. The main species include Scots Pine, Corsican Pine, Beech, American Sycamore (*Platanus occidentalis*), Common Oak, Ash (*Fraxinus excelsior*) and Crack Willow (*Salix fragilis*).

5.2.10 At the western side of Sunnica West Site A field boundaries consist of large linear Pine, Beech, Willow and Sycamore. At the eastern side of Sunnica West Site A, within the grounds of La Hogue Farm are several high value mature oak trees surrounding the entrance of the farm shop, whilst at the rear of the farm shop there are two veteran status trees.

5.2.11 Around Dane Hill Farm the fields are bordered mainly by moderate quality tree groups dominated by Oak, Aspen (*Populus tremula*), Beech and Field Maple (*Acer campestre*). Within this group are three large mature individual native Black Poplar (*Populus nigra*) trees, which as a species are rarely distributed across Britain.

5.2.12 Other vegetation patterns include mature trees adjacent to The Avenue and adjacent to the watercourse which flows through Half Moon Plantation, to the south of Dane Hill Farm.

5.2.13 There are no scheduled monuments, nor listed buildings within the Sunnica West Site A. There are no registered parks and gardens within the Sunnica West Site A. Chippenham Park Registered Park and Garden (RPG) is to the north of this part of the DCO Site, along with Chippenham Conservation Area. Snailwell Conservation Area is to the west of Sunnica West Site A.

5.2.14 In respect of the RPG, the formal parkland is defined by its brick boundary walls, with the south drive extending towards Newmarket. While the wider rural landscape is not visible from within the park, it does form part of its setting, revealing evidence of the impact landowners had on the landscape, and forming part of the informal parkland context. The RPG, including the Hall also have an important relationship with the village of Chippenham to the north and this influence is visible within the arrangement of buildings and the predominant architectural style.

Sunnica West Site B Site Level Landscape Character

5.2.15 The land use across the Sunnica West Site B is agricultural and to provide an additional level of detail, has been divided into the following parcel references:

- W01 consists of several small fields which are divided by individual trees; and

- W02 is a single agricultural field which is open in character and bordered by a woodland belt along its southern edge.

5.2.16 With reference to the ***High Level Tree Constraints Report*** (Appendix 10B) the trees within the Sunnica West Site B are semi mature to mature in age. The main species include common Ash, Crack Willow, hybrid Black Poplar and Norway spruce (*Picea abies*). Most of the trees were identified as being low to moderate quality.

Cable Route A

5.2.17 With reference to the ***High Level Tree Constraints Report*** (Appendix 10B), most of the trees across Cable Route A are classified as low quality, with the exception of those in Heath Plantation.

5.2.18 There are no designated heritage assets within the Cable Route A

Cable Route B Site Level Landscape Character

5.2.19 With reference to the ***High Level Tree Constraints Report*** (Appendix 10B), the vegetation across this part of Cable Route B is assessed as moderate value plantations, with a high value group of beech trees adjacent to Chippenham Road.

5.2.20 There are no designated heritage assets within the Cable Route B. Burwell North Street Conservation Area is located within 1km of the Grid Connection Route B.

Burwell National Grid Sub-station Extension Site Level Landscape Character

5.2.21 The Burwell National Grid Sub-station Extension is located in the western part of the study area, adjacent to the existing Burwell substation. The area consists of grass and is bound by fencing and trees. The sub-station consists of a range of tall electrical equipment, which connects to overhead pylons.

5.2.22 There are no scheduled monuments within 1km from the Burwell National Grid Substation Extension. There are no Registered Parks and Gardens within 1km of the Burwell National Grid Substation Extension. Burwell North Street Conservation Area is located within 1km of the Burwell National Grid Substation Extension. Burwell North Street Conservation Area also falls within the Grid Connection Route B study area and is described under the relevant section.

5.3 Existing Biodiversity Features

Habitats

5.3.1 The following notable habitats are across the DCO Site:

Table 5-1 Notable Habitats within the DCO Site

Habitat type	Status
Woodland -Broad-leaved semi-natural	Local Biodiversity Action Plan (LBAP) Habitat; Lowland Mixed Deciduous

Habitat type	Status
	Woodland – Habitat of Principal Importance
Grassland - Unimproved Acid	LBAP, Habitat of principal importance
Grassland - Semi-improved Acid grassland	LBAP, Habitat of principal importance
Grassland - Semi-improved calcareous	LBAP, Habitat of Principal Importance
Grassland – Marshy / swamp	LBAP, Habitat of Principal Importance
Arable (including arable flora)	LBAP, Habitat of Principal Importance
Reedbed	Habitat of Principal Importance Reedbed
Running water	Including a network of ditches and rivers; Rivers are habitat of Principal Importance
Standing water	LBAP Habitat; Lakes and Ponds of certain criteria are Habitat of principal importance
Hedge - Defunct (species poor)	Habitat of Principal Importance
Hedge - Intact (species poor)	LBAP, Habitat of Principal Importance
Hedge - with trees (species poor)	Habitat of Principal Importance

Species

5.3.2 With reference to the ***Flora Report*** (Appendix 08B) surveys of arable field margins recorded rare/scarce arable flora species, including Corn Spurrey and Corn Marigold listed as Vulnerable in the UK and England recorded, Fine-leaved Fumitory (*Fumaria parviflora*) classified as Vulnerable in the UK and Near Threatened in England and Corn Chamomile classified as Endangered in the UK and England, (Stroh et al 2015 (Ref 8-29), Mcleod et al 2017) (Ref 8-30).

5.3.3 Within the Sunnica East Site B three Nationally Scarce species are present in dry acid grassland; Bearded Fescue, Sand Catchfly and Bur Medick and a NERC Act Section 41 species Annual Knawel.

5.3.4 Narrow-leaved Water Plantain (*Alisma gramineum*) was present in all three ditches surveyed in the Sunnica East Site A and is considered a Suffolk Rarity, however, it is not a priority species and is common throughout England.

5.3.5 With reference to the ***Aquatic Ecology Survey Report*** (Appendix 08D) three species with a Local distribution were recorded at Sunnica East Site A;

the Hairy Dragonfly (*Brachytron pratense*), the snail Leach's Bithynia (*Bithynia leachii*) and caddisfly (*Agrypnia pagetana*). One species with a local distribution was recorded at the Sunnica West Site B; the diving beetle (*Ilybius quadriguttatus*).

5.3.6 The invasive Signal Crayfish (*Pacifastacus leniusculus*) was recorded in the desk study from the Lee Brook adjacent the Sunnica East Site A. The remains of this species were also found in a ditch within the Sunnica East Site A.

5.3.7 With reference to the ***Terrestrial Invertebrate Scoping Report*** (Appendix 08C) there is the potential for notable terrestrial invertebrate species and assemblages to be present throughout the DCO Site, particularly in notable grassland habitats identified on Sunnica East Sites A and B.

5.3.8 With reference to the ***Aquatic Ecology Survey Report*** (Appendix 08D) and Sunnica West Site B there are records of protected fish species exist in the River Snail including Brook Lamprey (*Lampetra planeri*) and Bullhead (*Cottus gobio*). The River Snail fish community (excluding protected species) is composed by widespread common fish species including 3-spined Stickleback (*Gasterosteus aculeatus*) and 10-spined Stickleback (*Pungitius pungitius*).

5.3.9 With reference to the ***Aquatic Ecology Survey Report*** (Appendix 08D) and Sunnica East Site A and B there are records of protected fish species exist in Lee Brook including Brook Lamprey, Bullhead, and Brown Trout (*Salmo trutta*) and these species may be present in the ditches onsite as they are connected to Lee Brook via River Lark.

5.3.10 With reference to the ***Great Crested Newt Survey Report*** (Appendix 08E) Great Crested Newt (*Triturus cristatus*) has been detected in one waterbody within 500m of the DCO Site. This pond is c.250m from the Sunnica East Site B. Common Toad (*Bufo bufo*) is potentially present on Site as it is present in connected habitat to Sunnica West Site B.

5.3.11 With reference to the ***Reptile Survey Report*** (Appendix 08E) two species of reptile, Common Lizard (*Zootoca vivipara*) and Grass Snake (*Natrix helvetica*), were recorded within the Sunnica West Site B boundary during field surveys. Habitat within the Grid Connection Route B, between Sunnica West Site B and the BNGSE are a mixture of ditches, grassland and scrub and could be suitable for Grass Snake, Common Lizard and Slow worm (*Anguis fragilis*). Similarly, the ditches around the BNGSE could support Grass Snake.

5.3.12 With reference to the ***Survey of Breeding Birds Report*** (Appendix 08H), 90 bird species were recorded within the survey area during surveys for breeding birds, with territories for 62 species confirmed and four probable or possible territories, resulting in a breeding bird assemblage of 66 species across the DCO Site. Territories of one Annex 1 species: Stone-curlew (*Burhinus oedicnemus*) and five WCA Schedule 1 species (Stone-curlew, Hobby (*Falco subbuteo*), Quail (*Coturnix coturnix*), Little Ringed Plover (*Charadrius dubius*) and Barn Owl (*Tyto alba*) were confirmed within the survey area.

5.3.13 With reference to the ***Survey of Wintering Birds Report*** (Appendix 08I), 71 bird species recorded during the wintering bird surveys, including notable species such as Skylark (*Alauda arvensis*) and Yellowhammer (*Emberiza citrinella*).

5.3.14 With reference to the ***Bat Survey Report*** (Appendix 08G), surveys of Sunnica East Site A recorded very low to high bat activity (depending on the season and location) of at least 8 species; Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Noctule (*Nyctalus noctule*), Leisler's bat (*Nyctalus leisleri*), Myotis species, Brown Long-eared bat (*Plecotus auratus*), Serotine (*Eptesicus serotinus*) and Barbastelle (*Barbastella barbastellus*). A few barns are present (not affected by the Scheme) with roosting potential and foraging activity was observed along the watercourses and hedges.

5.3.15 Surveys of Sunnica East Site B recorded very low to high bat activity (depending on the season and location) of at least 8 species; Common Pipistrelle, Soprano Pipistrelle, Noctule, Leisler's bat, Myotis species (including Daubenton's bat (*Myotis daubentoniid*), Brown long-eared bat, Serotine and Barbastelle.

5.3.16 The highest levels of activity were recorded over the reservoir to the south and along Badlingham Lane, but also foraging was noted in fields particularly in the summer (*e.g.* over maize crops). Numerous potential roost features are present in mature trees (not affected by the Scheme).

5.3.17 Surveys of the Sunnica West Site A recorded very low to high bat activity (depending on the season and location within the Scheme) of at least 8 species; Common Pipistrelle, Soprano Pipistrelle, Noctule, Leisler's bat, Myotis species (including Natterer's bat *Myotis nattereri* identified from netting survey), Brown Long-eared bat, Serotine and Barbastelle. Foraging was observed along tracks, field margins and adjacent to woodland. Numerous potential roost features are present in mature trees and farm buildings (not affected by the Scheme).

5.3.18 Surveys of Sunnica West Site B recorded moderate to high bat activity of at least 8 species; Common Pipistrelle, Soprano Pipistrelle, Noctule, Leisler's bat, Myotis species, Brown Long-eared bat, serotine and barbastelle. The highest number of bat passes on the static detector at this site were along the central hedge with 68 passes per hour in summer 2019. Numerous potential roost features are present in mature trees along the central hedge, and in scattered mature trees in the southern field (not affected by the Scheme).

5.3.19 The habitat within the Grid Connection Routes A2 and B2 has not been surveyed for bats. However, the habitat within these areas was reviewed from PRoWs and aerial photography and evaluated for the potential for bats to occur, using professional judgement. The review concluded that bats are likely to occur within woodland and scrub habitat along these Grid Connection Routes and the likelihood of roosts and foraging/commuting routes of value being present could not be ruled out.

5.3.20 With reference to the ***Badger Survey Report*** (Appendix 08J), four Badger (*Meles* meles) setts, in current use, were identified within the DCO Site. Two

setts, including an active main sett, in Sunnica East Site B, one outlier sett in Sunnica West Site A; and a main sett within the preferred location of the Burwell National Grid Substation Extension. The habitat within the Grid Connection Routes A2 and B2 has not been surveyed for Badger to date. However, the habitat within these areas was reviewed from PRoWs and aerial photography and evaluated for the potential for Badger to occur, using professional judgement. The review concluded that Badger is likely to occur within woodland and scrub habitat along these Grid Connection Routes and the likelihood of a sett being present could not be ruled out.

5.3.21 With reference to the ***Riparian Mammal Survey Report*** (Appendix 08K), Water Vole (*Arvicola amphibius*) presence was recorded in ditches within Sunnica West Site B, within ditches in Grid Connection Route B2 (where access allowed) and in peripheral ditches of Sunnica East Site A and B. Otter (*Lutra lutra*) presence was recorded in six peripheral watercourses of Sunnica East Site A.

6 Potential Impacts and Avoidance

6.1 Landscape and Visual

6.1.1 The ***Chapter 10: Landscape and Visual Amenity*** sets out the assessment of the Scheme in relation to landscape and visual receptors for the construction, year 1 of operation, year 15 of operation and the decommissioning phases.

6.1.2 For the construction phase, signficant adverse effects were predicted to county landscape character areas, local landscape character areas and at the DCO Site landscape character level and to a range of visual receptors (people's views). This was due to the presence of machinery and activity across the DCO Site, with activities including excavation, boring, installation of panels, solar-stations and the taller BESS and sub-stations, which would require tall lifting equipment.

6.1.3 For the year 1 of operation phase, significant adverse effects were also predicted to county landscape character areas, local landscape character areas and at the DCO Site landscape character level. This was due to the change in land use, with new massing via the panels and associated structures, the reduction in aesthetic and perceptual qualities of the landscape from the 'infrastructure' character of the Scheme. Whilst new planting was accounted for in the year 1 assessment, it would not have fully established.

6.1.4 By year 15, the landscape and visual assessment predicted that the degree of landscape and visual effects would reduce due to the establishment of the proposed Green Infrastructure that forms part of the Scheme and is discussed in this document, consisting of native grassland, new hedgerows and trees. Due to this, significant adverse landscape effects were predicted at the Site landscape character level only and one local landscpae character area (LLCA 24: Hundred Acre Plantation).

6.1.5 The assessment also identified significant effects on visual amenity in year 15 at one of the assessed viewpoints (Viewpoint 39: Limekilns). This was due to the open character of existing views across a valley and the elevated position of the receptor.

6.1.6 For all other visual receptors, the significant effects were avoided by the combination of the existing vegetation and proposed planting that forms part of the Scheme and is discussed in this document.

6.1.7 However, there remains a need to avoid impacts on trees, for appropriate restoration of the landscape following construction, and for enhancements to the landscape character and improvements to the green infrastructure network, to meet requirements of local and national planning policy.

6.2 Biodiversity

6.2.1 The Scheme will result in the temporary and permanent loss of the following habitats:

- unimproved and semi-improved acid grassland;

- semi-improved calcareous grassland;
- marshy grassland;
- arable (including arable flora);
- other flora; and
- hedgerows.

6.2.2 There will be potential adverse impacts on a number of protected or notable species during construction of the Scheme. These include negative impacts to:

- terrestrial Invertebrates - due to loss of habitat;
- Common Lizard and Grass Snake – due to killing/ injuring during construction;
- birds – negative impacts to nesting bird species, including specially protected species (such as Stone-curlew) due to temporary and permanent loss of habitat and noise and visual disturbance during construction. As well as negative impacts to population of wintering birds due to loss of habitat and noise and visual disturbance from construction;
- Bats – due to temporary disturbance of habitats of value to foraging and commuting bats; and
- Badger - due to temporary and permanent loss of foraging habitat.

6.2.3 In addition, the presence of invasive non-native Signal Crayfish poses the risk of potential spread of crayfish plague and of impacting native plant and animal species through predation.

6.3 Impact Avoidance

6.3.1 The impact avoidance measures outlined below would be implemented, as relevant and appropriate, prior to and during construction phase of each relevant part of the Scheme, the purpose being to minimise the impact of works on landscape and biodiversity features and to achieve legislative compliance.

6.3.2 Standard environmental best practice and mitigation will be implemented to ensure construction and operation of the Scheme complies with legislation relating to protected species. It would also aim to ensure the Scheme does not compromise the local conservation status of ecological receptors present within or in the vicinity of the Scheme. Where protected species licences are required, these would be obtained from Natural England sufficiently in advance of the works to meet with the optimum time for mitigation and to minimise any changes to the construction programme.

6.3.3 The implementation of these measures has been taken into account when assessing the likely impacts and effects of the Scheme on landscape and biodiversity features in ***Chapter 8: Ecology*** and ***Chapter 10: Landscape and Visual Impact Assessment*** (PEI Report Volume I).

6.3.4 The impact avoidance approach allows for the retention of trees to ensure that the connectivity of the existing green infrastructure network is maintained.

6.3.5 Actions that have been taken that have contributed to avoid and/ or reducing potential ecology and nature conservation effects.

6.3.6 These have included, through the parameters set out in the Parameter Plans:

- creating undeveloped buffers throughout the Scheme of at least 5 m from existing boundary features which are embedded within the Scheme design and which would consist of new planting as indicated on the Parameter Plans;
- ensuring that existing designated sites within the DCO Site are retained and measures are embedded within the Scheme design to ensure that ecology not impacted during construction, *e.g.* through siting construction routes away from and outwith designated sites;
- ensuring that existing woodland, treelines and the majority of hedgerows are retained and will be protected during construction of the Scheme; and
- retaining and managing existing grassland habitats.

6.3.7 Through the following provisions in respect of construction methodology, set out in the Framework CEMP (which will follow through to the detailed CEMP(s) produced post-construction, pursuant to the DCO):

- designing the Scheme to comply with industry good practice and environmental protection legislation during both construction and operation *e.g.* prevention of surface and ground water pollution, fugitive dust management, noise prevention or amelioration;
- crossings of watercourses where the presence of Otter and Water Vole have been determined, as well as the River Kennett, River Snail, Lee Brook, New River and Burwell Lode, to be undertaken using boring, micro-tunnelling or moling methods, with appropriate setbacks from the top of the banks (depending on habitats and other individual ecological constraints);
- the perimeter security fence around the Scheme to be implemented early in the construction phase to secure the site to prevent construction activity in proximity to retained vegetation, in particular designated sites within and adjacent the DCO Site and where required by Arboricultural surveys specific tree protection measures will be implemented, including solid hoarding fencing and construction exclusion zones;
- utilising motion detection security lighting throughout the Scheme to avoid permanent lighting and developing a sensitive lighting scheme ensuring inward distribution of light and avoiding light spill on to existing boundary features during the construction phase;
- the ecological measures within the CEMP(s) to be implemented by the selected construction contractor and overseen by an Ecological Clerk of Works (ECoW), where required.

- a Biosecurity Management Plan to be developed which sets out procedures to ensure any imported building/landscaping materials are free from invasive non-native species (*e.g*. Schedule 9 species). In the event that any future infestations of invasive non-native species are identified during the development process, exclusion zones will be established around them and the ecology team contacted for advice as detailed.
- no works to be undertaken within 10m of watercourses which will mitigate for potential hazards such as chemical and soils spills into watercourses;
- not undertaking in-channel works where invasive non-native species have been identified, *e.g*. Lee Brook, to avoid the spread of invasive non-native species.
- preparing mitigation strategies for protected species and, where required, applying for species licences from Natural England for translocation of animals away from construction areas sufficiently in advance of the works to meet with the optimum time for mitigation and to minimise any changes to the construction programme.
- undertaking vegetation clearance in advance of construction and at an appropriate time of year so as to avoid incidental injuring or killing of reptiles so that there will be no need to undertake any translocation of reptiles.
- establishing reasonable avoidance measures along the cable corridors, including buffers of 30m around any identified Badger setts or trees with bat roost potential.
- restoring post-construction any habitat removed from within the Grid Connection cable corridors;

6.4 Updated Surveys

6.4.1 An ecologist will complete a Scheme walkover in advance of works to reconfirm the ecological baseline conditions and to identify any new ecological risks. The walkover will be completed sufficiently far in advance of the works to allow for the completion of any additional, seasonally constrained surveys (*e.g.* surveys in support of any identified requirements for protected species licences) that may be required. These surveys will be undertaken in advance of the final LEMP and the Plan will be developed in line with the findings of these surveys.

6.4.2 Immediately prior to site clearance and start of construction of each relevant part of the proposed scheme, further site walkover surveys will be undertaken by an ecologist and landscape architect or arboriculturalist to confirm that the risks associated with the Scheme remain as previously assessed and, or to confirm the correct impact avoidance measures are being implemented (*e.g*. tree protection fencing, protected species stand-offs and other protection measures).

6.4.3 The scope of the required walkovers will be defined on a case by case basis in consultation with the project team and Sunnica Ltd, based on the specific risks associated with each relevant part of the Scheme and informed by the preceding ecological walkover described above.

6.4.4 Should any new constraints be identified as a result of the updated surveys, these would be captured in the final version of LEMP. Any additional impact avoidance or mitigation requirements would be identified in consultation with Sunnica Ltd and/or the relevant statutory consultees. Implementation of these measures is proposed to be secured by a Requirement of the draft DCO.

6.4.5 Any additional surveys would be instructed as necessary by the ecologist or landscape architect, based on professional judgement and the findings of the updated walkover surveys, or identified as appropriate by the Applicant or their contractor(s). These may be required, for example, based on the construction programme, working requirements or following identification of specific issues and constraints not covered by previous advice.

6.5 Protected Species Licences

6.5.1 All necessary protected species licences would be applied for and obtained prior to undertaking any works that might result in offences under the relevant legislation.

6.6 Ecological Clerk of Works

6.6.1 The scope of the Ecological Clerk of Works (ECoW) would be advised by the ecologist and landscape architect based on relevant environmental commitments, the findings of the updated surveys, protected species licensing requirements and with reference to the relevant project programmes.

6.6.2 Relevant site staff would receive toolbox talks as necessary from the ECoW on the relevant ecological risks present, legal requirements, and the working requirements necessary to comply with legislation, and the final approved landscaping and biodiversity management and enhancement measures. Toolbox talks would be repeated as necessary over the duration of the works.

6.7 Tree Works

6.7.1 The location of the Scheme would largely avoid the need for the removal of mature trees. Some pruning of mature trees may also be required, but it is unlikely that any mature trees would need to be felled.

6.7.2 Where works in close proximity to retained trees cannot be practicably avoided, these works would be undertaken in accordance with current best practice at the time of the works. At the time of issue of this Landscaping and Biodiversity Management and Enhancement Plan, current best practice is defined in:

- British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations (Ref 22); and
- National Joint Utilities Group (NJUG) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Ref 23).

6.7.3 All necessary protective fencing would be installed prior to the commencement of any site clearance or construction works. This would be set out in reports post the DCO Approval and pre-construction tree surveys, via, Arboricultural Reports and Arboricultural Method Statements..

6.8 Solar Panels and Related Structures

6.8.1 The following impact avoidance measures in relation to structures were highlighted as part of the ***Landscape and Visual Amenity Assessment*** (Chapter 10: Landscape and Visual Amenity) and shall be taken into consideration as part of the detailed design of the Scheme.

- suitable materials would be used, where reasonably practicable, to minimise reflection and glare and to assist with breaking up the massing and scale of the panels, solar-stations and associated structures;
- the selection of finishes for the infrastructure would be informed by the tonal colours of the landscape to minimise the visual impact of the Scheme; and
- visual clutter would be minimised, where possible, through careful siting and design.

6.9 Impact Avoidance Measures for Hedgerows and Tree Loss

Hedgerows

6.9.1 Species poor hedgerows will be crossed by the scheme and may need to be wholly or partially removed to facilitate construction works.

6.9.2 On completion of construction, the affected hedgerow sections will be re-instated in full and a diversity of native woody species of local provenance will be used to improve their biodiversity value. Species will include Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Hazel (*Corylus avellana*), Holly (Ilex *aquifolium*) and Field Maple (*Acer campestre*).

6.9.3 All hedgerow planting will be notch planted into cultivated ground at approximately 75 cm spacings in a double staggered row and supported by an appropriate timber stake and guard (all fitted as per manufacturer's recommendations).

Trees

6.9.4 Trees within the Scheme footprint that cannot be retained will be replaced with native species (either the same species as the tree that has been removed or another suitable native species) within the DCO Site boundary.

6.9.5 In a number of places trees are proposed as visual screening to mitigate the visual impacts of the Scheme, as shown on Figures 3-1 and 3-2. Smaller trees have been specified across the Scheme to aid in their establishment.

6.10 Precautionary Working Methods

6.10.1 The following precautionary working methods would be employed to minimise potential adverse effects on protected/notable species prior to and during construction. Precautionary working method statements would be

produced as necessary to specify working requirements and other necessary impact avoidance measures. These measures would be controlled and implemented through the Construction Environmental Management Plan (CEMP) that would be developed by the contractor. This is proposed to be secured by a Requirement of the draft DCO.

Nesting Birds

6.10.2 Where practicable, vegetation clearance works will be undertaken outside the bird nesting season, which is typically between March and August inclusive. Where it is not practicable to avoid the bird nesting season, an ecologist would inspect all areas of vegetation prior to clearance and clearance would only be undertaken subject to the instruction and requirements of the ecologist to ensure the protection of birds and their nests. Cleared ground would be maintained in a disturbed state in the run-up to construction, to minimise the risk of ground nesting birds attempting to nest on cleared ground.

6.10.3 Where vegetation clearance works are required during the bird nesting season (*i.e.* between the months of March and August inclusive), these works can only proceed following the completion of a nesting bird check which will be undertaken by an experienced ornithologist. Vegetation clearance will not be undertaken where any active bird nest is identified, and all nests will be protected from harm until the nesting attempt is complete. This will require a buffer of vegetation to be left around the nest, the size of which will depend upon the species involved. Vegetation clearance can only proceed once the nesting attempt has been deemed, by a suitably qualified ornithologist, to have finished.

Reptiles

6.10.4 Precautionary working methods to avoid accidental killing or injury of reptiles will be implemented during construction of the Scheme. Precautionary methods will include initial clearance of potentially suitable vegetation down to a height of approximately 30 cm, followed by dismantling of any suitable features, such as log piles and tree stumps, under ecological supervision. Vegetation will be cleared to ground level once no risk of reptile presence remains. Vegetation within working areas will be kept short during construction to discourage reptiles from entering the Scheme.

Amphibians

6.10.5 Precautionary methods of working (PMW) for amphibians, including Great Crested Newts, are similar to the ones outlined for reptiles (above).

6.10.6 Consideration would be given to proceed with any minor vegetation clearance works and minor construction activities using a precautionary method of working where appropriate.

6.10.7 In general, PMW would consist of encouraging any amphibians to move away from the work's footprint into adjacent areas using habitat manipulation. These precautionary measures are implemented to discourage / displace any residual amphibians from the nearby area. To mitigate against harm to any residual amphibians present, the following precautionary

methods of working are deemed appropriate for the works within the areas of suitable great crested newt or other amphibian habitat.

6.10.8 Habitat manipulation methodologies will vary between areas and seasons but will in general consist of a phased approach, explained below:

- The on-site vegetation is cut short during winter (when amphibians are hibernating) if possible. If not possible (i.e. works during active season), the vegetation will be cut in a phased approach, firstly cutting to 30cm, then a cut to 15cm, then to ground level.
- The vegetation should then be kept short to displace any present amphibians, which may be present, away from the works when they emerge in the early spring and discourage amphibians from moving into the Scheme from the surrounding habitat.
- Vegetation (including topsoil) should be carefully removed using an excavator using a toothed bucket. These works should be supervised by an ecologist if this is deemed appropriate to do so.
- Any habitat features which may conceal sheltering amphibians (log piles, rubble mound bunds, any other debris etc.) will be dismantled by hand under supervision of the ecologist.
- Dismantling of any rubble piles should be conducted during the amphibian active season (i.e. April to October) during warm weather conditions (i.e. above 5 degrees Celsius) to avoid killing or injuring potential hibernating amphibians.

6.10.9 In the unlikely event that any Great Crested Newts are discovered, works must cease immediately and an ecologist must be consulted to determine how to proceed. If other amphibians are discovered during vegetation clearance it is proposed that these are translocated to suitable habitat nearby in suitable weather conditions.

Animal Welfare Requirements

6.10.10 Construction excavations have the potential to trap wildlife, such as badger and otter, and result in offences under animal welfare legislation. This would be avoided through implementation of simple precautionary mitigation. All excavations deeper than 1m would be covered or fenced overnight, or where this is not practicable, a means of escape would be fitted (*e.g*. battered soil slope or scaffold plank), to provide an escape route should any animals stray into the construction site and fall into an excavation.

Invasive Species Management Plan

6.10.11 An Invasive Species Management Plan (ISMP) will be prepared as an integral section of the OLEMP based on the findings of the update surveys. The ISMP will identify requirements for invasive plant management to achieve legislative compliance over the construction phase. There may be ongoing requirements to control invasive plant species during establishment of new habitats and soft landscape, or otherwise to address wider requirements for legislative compliance.

6.10.12 If necessary, the ISMP will be updated to allow it to be rolled forward into the operational phase of the Scheme.

Lighting

6.10.13 Construction temporary lighting would be arranged so that glare is minimised outside the DCO Site as far as reasonably practicable, via the use of best practice measures. Permanent lighting will be activated by motion detection avoiding operational light spill on areas outside the DCO Site.

7 Proposed Green Infrastructure

7.1.1 Proposals for new habitat creation and landscaping are accommodated, where feasible, across the DCO Site along with the focus on protection and enhancement of existing habitats.

7.1.2 The implementation of these measures has been taken into account when assessing the likely impacts and effects of the Scheme on landscape and biodiversity features in ***Chapter 8: Ecology*** and ***Chapter 10: Landscape and Visual Impact Assessment*** (PEI Report Volume I).

7.1.3 The landscape and biodiversity effects of the Scheme are considered to be localised. While there will be a short-term impact during construction, the land and associated field boundary features (hedgerows, drainage ditches, trees) will be retained overall. Opportunities for meaningful landscape and biodiversity enhancement within the Scheme have been identified where appropriate via grassland and new tree planting.

7.1.4 Biodiversity offsetting metrics will be used to quantify the biodiversity value of the proposed enhancement and to compare these to the biodiversity value of proposed losses to demonstrate that the Scheme can achieve no net loss and net gain of biodiversity. This information will be presented within the ES.

7.2 Green Infrastructure Proposals

7.2.1 The Green Infrastructure proposals are illustrated in Figures 3-1 and 3-2.

Creation of replacement grassland habitats

7.2.2 A total of 56.6 ha within Sunnica East Site A and 32.9 ha within Sunnica East Site B of embedded mitigation has been included within the Scheme design for creation of biodiverse habitats to mitigate loss of existing habitats. This will include:

- At least 10.7 ha of dry acid grassland creation/restoration. The management of dry acid grassland would aim to maintain a sward height of 1 to 5 cm with approximately 15% bare ground. This is generally undertaken by low intensity grazing, either naturally by Rabbits (Oryctolagus cuniculus) (where present) or by livestock such as sheep or cattle. If not cutting could be undertaken in late summer with arisings removed. Shallow rotavation[1] may also be used to create bare areas in the absence of grazing.
- A total of 81.8 ha within Sunnica West Site A and 43.1 ha within Sunnica West Site B of embedded mitigation has been included within the Scheme design for creation of biodiverse habitats to mitigate loss of existing habitats. This will include Marshy grassland (floodplain and grazing marsh) creation/restoration in Sunnica West Site B. This will increase the biodiversity value of the Scheme and provide an extensive buffer of habitat between developable areas and Fenland SAC/Chippenham Fen Ramsar/SSSI and Snailwell Meadow SSSI.

[1] Breaking up the soil surface

- Throughout the Scheme, a range of new grassland mixes beneath the solar panels to improve the range of fauna and increase the biodiversity, in comparison to existing intensive agriculture. Management will be undertaken in a variety of ways to ensure maximum biodiversity gains. This may include leaving open areas between or surrounding the panels or adjacent to new access roads. Vegetation would be established through natural regeneration or from seed collection from the grasslands identified within the DCO Site and through a suitable long-term habitat management regime. Consideration will be paid to microclimatic conditions when considering appropriate species.
- Across the Scheme, the management of solar arrays, particularly margins, located in areas identified for their arable flora, will be managed for rare and scarce arable plants. This may include annual soil rotavation, avoiding planting of field margins and avoiding the use of herbicides around the solar panels.

General Principles for creation of replacement grassland

7.2.3 The land across the DCO Site is mainly arable and the soil is not likely to meet nutrient requirements.

7.2.4 All clods will be broken up and alien material (such as plastics and metals) above 100mm in size will be removed from the chalk/soil mix before being laid. The top 50mm of the planting medium will then be raked to prepare a fine tilth for the seedbed. The raking will occur immediately before sowing.

7.2.5 Where the area will not be subject to excavated material and the soil does not meet the nutrient requirements, the Contractor is to spray the area off with a herbicide and remove the dead material. The Contractor is then to add a layer of a chalk up to a maximum of 150mm but ensuring that the grounds levels match and tie in with existing levels. The chalk is to be mixed with topsoil stripped from elsewhere along the Scheme at a ratio of three parts dug chalk to one part topsoil.

7.2.6 The soil will be physically screened before use to ensure that no clods of material are present and that all stones and other alien material (such as plastics and metals) above 50mm in size are removed. No clay soils will be used and only soil with a high pH (above pH7) will be used. The top 50mm will then be raked to prepare a fine tilth for the seedbed. The raking will occur immediately before sowing. This is to avoid disturbing the existing substrate and potential archaeology.

7.2.7 It is considered most appropriate to select a single calcareous grassland seed mix that will be sown at all locations to be put down to chalk grassland.

7.2.8 Immediately after the seeds have been sown, the ground should be left undisturbed. It is not necessary to water the seeds as the grassland regeneration should be a natural process.

7.2.9 In the first few years of establishment, the grassland may need to be mown between two and four times at even intervals throughout the growing season to control the more competitive species and allow the newly sown less competitive species to establish. The vegetation growth will be visually inspected every month during the growing season and this mowing regime

will be set up if it appears that certain species are at risk of out-competing the establishing seedlings. Mowing, if required at all, should be to a height of approximately 50-75mm.

7.2.10 Grazing should be prevented for the first three years to allow seedlings to establish sufficient root systems. Cut vegetation will be removed from the grassland area and taken to a composting location; this can and should be located near to each main area of cutting to avoid the need for material to be moved long distances. Nearby scrub and woodland areas would be ideal. This will limit the deposition of nutrients, controlling the initial flush of weeds and promoting root establishment of grasses and wildflowers.

7.2.11 Control of invasive plants such as Spear Thistle (*Cirsium vulgare*), Blackgrass (*Alopecurus myosuroides*), Creeping Thistle (*Cirsium arvense*), Broad-leaved Dock (*Rumex obtusifolius*) and Ragwort (*Senecio jacobaea*) may be required as these common weeds could colonise the Scheme naturally and potentially dominate the vegetation if not controlled. This control can be achieved in a targeted manner using a weed wiper, targeted spraying or by hand weeding. Volunteer (self-sown) cereals should also be identified and removed.

7.2.12 Rabbit proof fencing is not currently proposed for sown areas. Rabbit grazing is characteristic of short-sward open grassland communities but excessive grazing before seedlings have established can be harmful to the vegetation. This situation will be monitored to determine if management action is required.

Species-rich grassland under the solar panels and creation of replacement arable flora

7.2.13 Beneath the panels, species-rich grassland will be encouraged. Any bare areas created during construction will be re-seeded, post construction, using a mix of native grass and wildflower.

7.2.14 Around the periphery of the panels, these areas will be managed and enhanced for arable flora which will benefit a range of wildlife, including terrestrial invertebrates, amphibians, reptiles; small mammals (such as voles), and both foraging and ground-nesting birds. Leaving rough areas of grassland margins, which will benefit small mammals, will also provide foraging habitat for Barn Owl *Tyto alba.*

7.2.15 Following installation of the solar panels, a wildflower seed mix will be sown between rows and such appropriate mixes include EM3 – Special General Purpose Meadow Mixture or EM2 –Standard General Purpose Meadow Mixture. Grass seed will be sown from April to May or from September to October, during calm weather and not when the ground is frost bound or waterlogged. The seed will be sown in accordance with the supplier's guidance. A suitable wildflower mix could be, for example, EM7F – Wild Flowers for Sandy Soils.

Hedgerows – infill planting and creation

7.2.16 During construction existing hedgerows shall be protected, retained and inspected by measures set out by the Contractor's Arboricultural Mitigation

Strategy which would be developed within the Contractors LEMP, as part of the DCO Requirements.

7.2.17 This will also include managing the structure and integrity of the hedgerows during the construction period, with any trimming undertaken outside of the bird breeding season.

7.2.18 Best practice horticultural techniques should be used in the planting of hedgerow vegetation to ensure rapid early growth. Rapid attainment of effective screening would be achieved through the autumn planting of both hedgerow and hedgerow with trees with a healthy root structure, including a mix of 40-60cm and 60-80cm transplants of blackthorn, hazel, hawthorn and holly, depending on species, and feathered hedgerow trees of beech and oak of 150-175cm and 200-250cm, depending on species. Fruit and nut bearing species would provide a food source for birds and small mammals.

7.2.19 The ground below the hedgerow planting will be maintained as bare ground in the first two to three years after establishment. Depending upon establishment of trees, these areas would then be seeded with a low-vigour native wildflower seed mix suitable for hedgerows. The ground flora should be maintained through annual cutting and removal of vigorous weed species. Once established, new hedgerow planting should be subject to the same maintenance work as for the rest of the existing hedgerows.

Tree Planting

7.2.20 Groups of trees would be planted to reinforce existing vegetation patterns and aid in enclosing the Scheme.

7.2.21 Native species of local provenance would be used, including:

- Pedunculate Oak *(Quercus robur);*
- English Elm *(Ulmus minor);*
- Field Maple;
- Birch*;* and
- Scots Pine.

7.2.22 All new trees would be notch planted at approximately 2m centres with a random distribution into cultivated ground. All planting would also be supported by an appropriate timber stake and tree shelter, fitted as per manufacturer's recommendations.

7.2.23 All new tree plantings would be subject to the maintenance regimes, in which all plants found to be dead or dying would be replaced within the first available planting season. If areas of trees are seen to be failing, soil samples may be needed to identify potential soil issues affecting tree health. Either soil remediation would be required or, if not practical, a more suitable tree species or location would be chosen. Following the completion of the initial five-year aftercare period all new planting plots will undergo an annual condition assessment and an appropriate programme of works developed to address changes in condition and site requirements. Such work may

include; additional replacement planting, tube/stake removal, pruning, coppicing, or thinning out of plots to encourage establishment.

Creation of Stone-curlew nesting Plots

7.2.24 At least three alternative nesting sites for Stone-curlew will be secured and prepared in advance of the Stone-curlew breeding season (*i.e.* before mid-March), so that appropriate mitigation is in place during construction. These areas will then be retained and managed throughout the lifespan of the Scheme.

7.2.25 Details of plot creation and management of nesting plots will follow the RSPB information Note 'Managing nest plots for stone-curlews', with further requirements set out in the Countryside Stewardship Higher Tier 'AB5: Nesting plots for Stone-curlew' guidance note.

7.2.26 The most successful plots for Stone-curlew nesting on arable farmland are generally 2ha in size and located in level or slightly sloping fields of at least 5ha (or 10ha if woodland forms at least a quarter of the field boundary) with an open aspect, away from sources of disturbance and with suitable feeding areas within 1 km of the Scheme. Chicks rarely move more than a few hundred metres from the nest and most adult foraging activity occurs within 1km of the nest or location of chicks.

7.2.27 Stone-curlew are very susceptible to human disturbance and avoid nesting near human habitation and major roads. They may also abandon nests if they are suddenly faced with a new type of disturbance at any time within the breeding cycle.

7.2.28 Breeding plots should be sited away from public footpaths, where possible. Details of plot creation and management in the Brecks are provided by the RSPB information Note '*Managing nest plots for stone-curlews'*, with further requirements set out in the Countryside Stewardship Higher Tier '*AB5: Nesting plots for stone curlew*' guidance note. Ideally the plot location should remain fixed, as Stone Curlew are site faithful. However, if the plot needs to be rotated to fit with the farming system it must remain in situ until 30th September. A 2-6m grass buffer should be located around the edge of the plot. These provide shelter and a foraging area for the birds. They also protect important arable plants on the plot from spray drift. The plots should be on arable fields of at least 5ha, or 10ha if woodland forms at least a quarter of the field boundary and at least 100m away from woods, in-field and hedgerow trees, buildings, overhead power-lines, main roads and public rights of way.

7.2.29 Various cultivation techniques can be used to create a rough tilth. The best results for Stone-curlew are achieved by using a spring tine cultivator, discs, cultivator with a press (not a pack roller or flexi-coil) or a plough with press. Where plot locations are already bare, cultivation may not be necessary, but weeds should be controlled with herbicide so that the plot remains bare until April.

Figure 1. Stone Curlew plot in a Brecks arable field (RSPB Information note – Managing nest plots for Stone Curlews)

Provision of wildlife boxes

7.2.30 A range of artificial bird and bat boxes will be installed in existing woodland areas to increase the availability of nesting and roosting features and enhance the value of the woodlands for these species' groups.

7.2.31 A total of 40 bird nest boxes and 30 bat roost boxes of varying types to suit different species of birds and bats will be installed within the retained woodland areas on suitable trees, in locations to be determined by an ecologist at the time of installation.

Creation of Habitat Piles

7.2.32 Habitat piles and hibernacula would be constructed throughout the Scheme areas using natural materials generated during clearance of the site, such as logs, turf and grass strimmings. These would provide refuge and hibernation opportunities for amphibians and reptiles, as well as dead wood habitat for invertebrates, which would in turn benefit fauna such as bats and birds.

8 Management, Maintenance and Monitoring of Landscape and Biodiversity

8.1 Landscape

Species Rich Grassland

8.1.1 The management regime for species-rich grassland within the solar farm is not yet defined, but if cutting is preferred for areas of species rich grassland, this will include:

- taking a first cut to 5 cm height from late July to mid-August after plants have set seed;
- taking a second cut, as per the first cut, towards the end of October;
- if the grass regrows vigorously, taking a third cut in February to ensure that the sward is approximately 5 cm high;
- approximately one third of the grassland areas will be left uncut and managed as tussocky grassland to retain some habitat structure and refuge for local wildlife when the remainder of grassland is cut;
- all arisings will be removed and a proportion will be used to create habitat piles for the benefit of species such as Grass Snake; and
- scrub encroachment will be controlled within areas of species-rich grassland and will be maintained at no greater than 10% total cover; and
- measures to prevent or reduce grazing by rabbits, such as installation of fencing, may be required during the early development of species rich grassland in order to allow it to establish properly.

8.1.2 Initial management of new areas of species rich grassland will be in accordance with the recommendations of the seed supplier. Following successful establishment, management regimes are likely to be comparable to those outlined above for existing grassland.

8.1.3 Works will also include the following actions:

- removal of litter, rubbish and debris;
- spot treat undesirable species;
- hand-pulling of Ragwort (if required);
- establishment cuts;
- subsequent cuts;
- collection and removal of arisings;
- removal of emerging scrub;
- checking and recording defective plants and identify a list of replacements;
- re-seeding failed areas.

Long-term management

8.1.4 It is likely to take at least five years for the grassland to develop into a stable community and even then there are likely to remain numerous sparsely vegetated areas; this variation is desirable as it provides valuable structural diversity.

8.1.5 Management will be essential to maintain an early successional community for the long-term. Without management the community will (at varying rates depending upon the nutrient availability of the substrate) progress naturally through the later successional stages and become tall, dense and grass-dominated and ultimately develop extensive scrub encroachment. A regime of cutting and/or grazing is required to prevent domination of the sward by scrub or aggressive grass species.

8.1.6 Mowing must be undertaken in the appropriate conditions, i.e. when the ground is dry to prevent poaching of the grassland. Where grazing is to be undertaken, water trough locations will need to be selected carefully as the areas immediately around the troughs are likely to be poached. Grazing is generally preferable to mowing as it is less labour intensive and the action of grazing helps to spread seeds, opens up small areas of bare ground and reduces the build-up of leaf litter.

8.1.7 Once an even sward is established (*i.e*. one not dominated by a small number of competitive species) mowing will only be needed once or twice a growing season. Ideally this should only take place in autumn after the grasses and wildflowers have set seed, to allow for new growth of species the next season. Arisings will be left in-situ for 24hrs to encourage seed drop, before being removed to the designated composting location. Where required, litter picking should take place prior to each grass cut and all stones and debris removed.

8.1.8 Some areas of grassland along the meadow margins adjacent to woodland and hedgerows should be left for a year or more between cuts in order to provide dense ground level cover for reptiles, small mammals and invertebrates.

8.1.9 These management requirements will need to be adjusted in response to changes in the vegetation as time progresses.

Hedgerows

8.1.10 Native species hedgerows across the DCO Site will provide valuable habitat and food source for local wildlife. Hedgerow height is important to screen views to and from the road and should be maintained at a minimum of 1.5m high. The treatment of arisings needs to be considered along roadsides and may determine maintenance techniques such as flailing.

8.1.11 Native species hedgerows provide good ecological value, through use of local species and form. Proposed hedgerows linking to the existing hedgerows provide a continuation of wildlife corridors and protect adjacent fragile habitats. Hedgerows provide a visual screening function. To sustain a dense structure requires more frequent cyclical operations or phased maintenance in the initial years following installation.

8.1.12 Specific management operations are:

- Remove litter, rubbish and debris;
- Spot treat undesirable species;
- Re-firm plants;
- Inspect and adjust guards;
- Check and record failed or defective plants;
- Replacement of failed or defective plants.
- Non-desirable woody species should be removed during management operations and at other times as necessary, where this does not prejudice screening requirements.
- In order to fulfil the management objectives, each hedgerow should be managed as appropriate, i.e. by trimming, laying, coppicing, bulking up, etc.
- If managed by laying, this should be on a rotational basis. This is a traditional management technique and seeks to retain the structural integrity of hedgerows and maintain connections with other habitats. Cutting should be carried out at the end of the winter in February, thereby retaining berries through the winter months for wildlife, and avoiding the bird breeding season.
- Where trimmed, hedges should, wherever possible, be managed on a three year rotation with only one side cut a year to help develop the desired tall bushy structure.
- Cutting back undergrowth, overgrowing or overhanging shrubs and minor tree branches from any pathways to maintain an unobstructed width of at least 2m or the existing width of the pathway, whichever is the greater.
- Retaining dead, over-mature or dying hedgerow trees wherever possible, but those which are considered dangerous for health and safety reasons, for example adjacent to public footpaths or residences, to be felled or lopped as appropriate to maintain safety, and in accordance with protected species constraints.
- In the interests of wildlife, hand weeding, where feasible, should take precedence over the use of herbicides in hedgerows. However, in certain instances, herbicide may be the most effective measure to take against in relation to unwanted species.
- Where herbicide application is needed for the removal of unwanted species, an appropriate herbicide would be applied in July - August in small controlled areas around the tree base.

Individual Trees

8.1.13 Maintenance works to trees need to be planned to avoid the bird nesting season. Tree works will include the following actions:

- Re-firm plants;
- Inspect and adjust stakes, guards, irrigation pipes and ties;

- Apply herbicide to plant circles;
- Inspect and top-up mulch as required;
- Formative pruning;
- Check and record failed or defective plants;
- Replacement of failed or defective plants.

8.2 Biodiversity

Stone-curlew plots

8.2.1 Stone-curlews are very susceptible to human disturbance and may also abandon nests if they are suddenly faced with a new type of disturbance at any time within the breeding cycle. Therefore, during the Stone-curlew breeding season (March to September, inclusive), the Stone-curlew plots should be avoided and there should be no entry to these plots unless essential to the maintenance or monitoring of them.

8.2.2 A successful breeding plot will provide a predominately open area of bare ground with sparse vegetation from February to September. Excessive vegetation growth can cause birds to abandon nests or severely restrict the area in which chicks can feed.

8.2.3 The following cultivation programme would be required:

- By 15th March, prepare the whole 2ha plot by discing/ light cultivation, ideally in February. This creates a rough bare fallow that provides suitable conditions for the first Stone Curlew nesting attempt.
- During May, spray the whole plot using a non-selective herbicide ideally when the vegetation is no more than a few centimetres tall. This will create bare ground rather than a mat of dead vegetation. Spraying reduces the risk associated with intrusive management (such as through mowing) to a level that will not impact the population of Stone Curlew. The only danger from spraying, to Stone Curlew nests/chicks, is from tractor wheels. If the nest location is known it may be possible to reduce this risk by avoiding the area around the nest and/or by spraying only half of the plot.
- Retain the fallow through the autumn/winter (at least until 30th September). Stone Curlew can nest late into the year so the fallow must be left until the end of September. If left through winter, it will provide a vital source of seeds for farmland birds.

8.2.4 The timing of any management may need to be adjusted in accordance with any breeding attempts and this will be informed by the post-construction monitoring.

8.2.5 Whilst cultivation of plots is generally preferred to suppress vegetation, it may be necessary to spray plots with an appropriate herbicide, rather than mow. Again, this would be informed by the post-construction monitoring.

Wildlife Boxes

8.2.6 Bird and bat boxes made from long lasting materials (such as Woodcrete) will be used and would be expected to have a life expectancy of 20-25 years.

However, the condition of all wildlife boxes installed would be monitored every five years during the operation of the scheme and replacements will be made as necessary. Inspections can be timed to coincide with the required inspections of new tree and shrub plantings.

8.2.7 All wild birds, their active nests and eggs are protected under the Wildlife and Countryside Act (1981), as amended. This makes it an offence to deliberately, or recklessly kill or injure any wild bird or damage or destroy any active nest or eggs of a wild bird.

8.2.8 Therefore, annual cleaning of bird boxes cannot be undertaken between the months of March and August inclusive, when birds may be using the boxes. Therefore, bird boxes should be cleaned between October and February to prevent the build-up of nest parasites in the boxes whilst avoiding the risk of disturbing birds using the boxes as a roost site during the cold winter months.

8.2.9 Bat boxes will be inspected by an appropriately licensed bat surveyor for evidence of uptake, and any evidence of roosting bats will be recorded to assist with ongoing management of the woodland on site.

8.2.10 Bat boxes are, in most circumstances, unlikely to be used by hibernating bats during winter months (between November and February inclusive). Therefore, any maintenance that is required on bat boxes should be undertaken during these months, when bat droppings and any bird nests will be removed.

8.2.11 If bats are inadvertently discovered during maintenance, the person undertaking the maintenance should replace the box and leave site.

8.3 Post-construction Monitoring

8.3.1 Monitoring is required in order to determine that the objectives documented within this OLEMP are being achieved and whether remedial action may be required. The baseline against which the effects of the actions resulting from the monitoring can be compared against, comprise the pre-construction baseline data.

8.3.2 A post-construction monitoring programme will be formalised and agreed as part of the DCO submission and included within the finalised LEMP. Walkover surveys of the DCO Site will be undertaken between April and June in years 1, 3, 5 and 10 post-construction and will involve an inspection of the hedgerows and grassland habitats to ensure that they are being managed accordingly.

8.3.3 Post-construction monitoring of the success of the Stone-curlew plots will be undertaken annually between March and September for five years, post-construction and then again in year 10.

8.3.4 Post-construction monitoring for flora, birds (breeding and non-breeding), riparian mammals, Badgers, bats and reptiles will be undertaken in the respective seasons, in years 1, 3, 5 and 10 post-construction.

8.3.5 An annual check of wildlife boxes would be made each winter to ensure that all boxes are still in position and secure.

8.3.6 The management plan will be amended accordingly, based on the post-construction monitoring.

9 Roles and Responsibilities

9.1 The Applicant and/or the Appointed Contractor(s)

9.1.1 The Applicant and appointed contractor(s) and their Environmental Clerk of Works would be responsible for:

- correct instruction of all parties contributing to delivery of the final approved LEMP (including but not restricted to the Applicant's staff and their appointed ecologists, landscape architects, landscape contractors, construction contractors and management organisations) based upon the principles stated within the draft OLEMP;
- compliance with the final approved Landscaping and Biodiversity Management and Enhancement Plan, relevant legislation and any relevant planning commitments;
- keeping the appointed ecologist/landscape architect/arboriculturalist informed of work activities that require support and supervision, so that it is clear when attendance at the DCO Site is required;
- enacting/enforcing recommendations made by the ecologist/landscape architect/arboriculturalist, or otherwise agreeing an appropriate alternative course of action, if it is subsequently determined that previous advice is not practicable or is out of date; and
- keeping a record of measures taken to deliver the requirements of the final Landscaping and Biodiversity Management and Enhancement Plan, to provide an auditable record of compliance.

9.2 The Appointed Ecologist

9.2.1 The appointed ecologist would be responsible for:

- advising the Applicant and the appointed contractor(s) on ecological matters and requirements for compliance with relevant legislation and protected species licences, providing support as instructed, and monitoring compliance with the final approved LEMP;
- reviewing the LEMP at appropriate intervals and revising management requirements as necessary for the following five year period and subsequently for the duration of the Plan;
- where a European Protected Species Mitigation Licence (EPSML) has been granted it is the responsibility of the 'Named Ecologist' and licence holder or otherwise appointed ecologists to ensure the compliance of the licence and working activities associated with the agreed licence; and
- providing the Applicant and the appointed contractor(s) with survey reports and other written evidence required in accordance with the agreed scope of work and contractual obligations.

9.3 The Appointed Landscape Architect/Arboriculturalist

9.3.1 The appointed landscape architect/arboriculturalist would be responsible for:

- providing specialist site supervision in the form of walkover assessments relating to relevant landscape areas. This would be to assess landscape components and their condition and identify the need for landscape enhancement as instructed and in accordance with the agreed scope of work and contractual obligations, once the power station is operational;
- monitoring and assessing the landscape related elements of the approved Landscaping and Biodiversity Management and Enhancement Plan for their effectiveness on an annual basis for the first ten years following commencement of operation of the Scheme and then for the following five year period and subsequently for the duration of the Plan;
- ensuring that the landscape related elements of the approved Landscaping and Biodiversity Management and Enhancement Plan are reviewed at the end of the five year initial monitoring and assessment stage and amended accordingly for the following five year period and subsequently for the duration of the Plan. The LEMP shall be amended accordingly to suit any changing landscape conditions and ultimately inform the maintenance operations throughout the operational life of the Scheme; and
- ensuring that any reviews associated with landscape related elements of the approved LEMP clearly identifies any changes to site conditions and circumstances, whether the aims and objectives of the approved Plan are being met, and where identified changes are needed to existing management practices and timeframes.

Figures

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THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- Scheme Boundary
- County Boundary
- District Boundary
- Public Highway within Scheme

Proposed Scheme Plan

- Developable Area
- Native Grassland Planting within Archaeological Mitigation Areas
- Native Grassland/Wetland
- Native Grassland Planting
- Heritage Offset with additional planting along The Avenue
- Landscape Offset
- Proposed Woodland (new planting or infilling of existing vegetation)
- Retained Woodland
- Chalk Grassland
- Potential Provision of Permissive Route
- Proposed Hedgerow (new planting or infilling of existing vegetation)

Purpose of Issue: PEIR

Client: SUNNICA LTD

Project Title: sunnica energy farm

Drawing Title: FIGURE 10-14A LANDSCAPE MASTERPLAN SUNNICA EAST AND WEST

Drawn	Checked	Approved	Date
AD	RH	NC	03/09/2020

AECOM Internal Project No.: 60589004

Scale @ A3: 1:32,000

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File Name:C:\Users\Anna.Dilleto\AECOM Directory\Sunnica Energy Farm - GIS - General\Layout\PEIR\Chapter_10_Landscape\200903_SunnicaEnergyFarm_Figure10-14a_LandscapeMasterplan_SunnicaEastWest.mxd