SUNNICA ENERGY FARM

Preliminary Environmental Information Report

Chapter 8: Ecology and Nature Conservation

Sunnica Ltd

AUGUST 2020

Contents

Tables

8 Ecology and Nature Conservation

8.1 Introduction

8.1.1 This chapter identifies and proposes measures to address the potential impacts and effects of the Scheme on ecology and nature conservation (collectively referred to biodiversity within this chapter) during construction, operation and decommissioning. It provides a preliminary evaluation of relevant ecological receptors (including nature conservation designations, priority habitats, protected species and invasive non-native species (INNS)) associated with the Scheme, with each being assigned a nature conservation value (sensitivity (value)). Whilst the majority of features have been evaluated, some remain to be completed and these will be completed for the final DCO submission. The Scheme's potential direct and indirect impacts and effects on ecological receptors and their conservation status, inter-relationships, and their contribution to local (and if appropriate regional and national) biodiversity are identified. This assessment takes into account impact avoidance design measures and management activities when determining the significance of potential effects. The requirement for any further mitigation measures is then described and mitigation measures are taken into account in the assessment of potential residual effects.

8.1.2 Consultation responses and scoping opinions have been taken into account during the preparation of this chapter. Consideration is also given to other known projects and activities and specifically to the potential for interaction between the Scheme and other projects resulting in cumulative effects.

8.1.3 This assessment reports on the biodiversity baseline and Scheme design information available at the time of writing this PEI Report. A final assessment of the potential impacts of the Scheme on biodiversity including any updates to the baseline will be undertaken as part of the EIA and will be reported in the ES that will be submitted with the DCO application.

8.2 Legislation and Planning Policy

8.2.1 Legislation and policies relevant to the assessment of the impacts of the Scheme on biodiversity are outlined below.

8.2.2 The Scoping Report for the Scheme (Ref 8-1) also details how other legislation and policy relating to the protection and conservation biodiversity interests are being taken account of in the assessment.

International (including European) Legislation

8.2.3 European Union and global biodiversity targets are partly delivered through a range of legislative measures, which place obligations on Member States to protect biodiversity and the natural environment. In relation to wildlife and nature conservation, three key Directives relevant to the Scheme have been adopted by the European Union, namely:

- Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended) (Ref 8-2) Birds Directive);
- Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Ref 8-3) (Habitats Directive); and
- Regulation (EU) 1143/2014 on the introduction and spread of invasive alien species (Ref 8-4) (IAS).

8.2.4 These Directives provide for the protection of animal and plant species of European importance and the habitats which support them, particularly through the establishment of a network of protected sites, called Natura 2000 sites.

8.2.5 Further relevant legislation includes Directive 2000/60/EC (Water Framework Directive) (Ref 8-5), under which Member States are required to protect and improve their inland and coastal waters.

National Legislation

8.2.6 The main relevant legislative instruments relating to nature conservation in England are:

- Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 8-6);
- Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 8-7) (WFD);
- Wildlife and Countryside Act (WCA), 1981 (as amended) (Ref 8-8);
- Countryside and Rights of Way (CRoW) Act, 2000 (as amended) (Ref 8-9);
- Natural Environment and Rural Communities (NERC) Act, 2006 (as amended) (Ref 8-10);
- Protection of Badgers Act, 1992 (as amended) (Ref 8-11);
- Hedgerow Regulations 1997 (as amended) (Ref 8-12);
- The Eels (England and Wales) Regulations 2009 (Ref 8-13); and
- Animal Welfare Act 2006 (Ref 8-14).

8.2.7 The above legislation has been considered when identifying potential constraints to the Scheme, design options, and mitigation. Compliance with the above legislation may require obtaining relevant protected species licences prior to the implementation of the Scheme, which is considered further below.

National Planning Policy

8.2.8 As outlined in Section 1.3 of Chapter 1: Introduction, the EIA for the Scheme must have regard to the relevant policies of the NPPF and relevant NPSs.. Key aspects of the NPPF and relevant NPSs, which have been considered during the development of this chapter, are outlined below.

- NPS EN-1 with particular reference to paragraphs 4.2.2 and 4.2.3, which provide national policy on what an ES for a NSIP project should contain, paragraph 4.3.1 which states what the Secretary of State must, under the Conservation of Habitats and Species Regulations 2017 consider when granting a development consent order and part 5 section 5.3 which sets out guidance on generic impacts relating to biodiversity for the applicant's assessment and decision-making on the application.
- NPS EN-3 with particular reference to paragraph 2.4.2, which underlines the importance of good design for energy infrastructure in design of the project to mitigate impacts such as noise and effects on ecology.
- NPS EN-5 with particular reference to paragraph 2.8.9, which details biodiversity considerations when choosing an underground electricity line. This includes the environmental consequences as underground cables can disturb sensitive habitats.
- NPPF – with particular reference to Section 170 to 177, which state that the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible. The NPPF is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

National Guidance

- Planning Practice Guidance, Natural Environment (Ref. 60) with particular reference to 'Biodiversity and ecosystems' and the related policy in paragraphs 8, 11, 170, 175, and 117.

Local Planning Policy

8.2.9 Local planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for further survey, design options and ecological mitigation. The local planning policy relevant to the Scheme consists of the following:

- East Cambridgeshire District Local Plan Adopted April 2015 (Ref 8-16) with particular reference to Policy ENV 2: Design, Policy ENV 7: Biodiversity and geology, Policy COM 5: Strategic green infrastructure, and Policy SOH16: Green Lanes and Commons;
- East Cambridgeshire District Council Supplementary Planning Documents Renewable Energy Development (Commercial Scale) October 2014 (Ref 8-17), with particular reference to Section 5: Biodiversity and geology;
- East Cambridgeshire District Council Supplementary Planning Documents Wildlife Sites June 2010;
- Forest Heath District Council Core Strategy Adopted 2010 (Ref 8-18), with particular reference to Policy CS 2 Natural Environment, Policy CS

4 Reduce Emissions, Mitigate and Adapt to future Climate Change, and Policy CS 13 Infrastructure and Developer Contributions;

- Forest Heath and St Edmundsbury Local Plan: Joint Development Management Policies Document (2015) (Ref 8-19), with particular reference to Policy DM10 (Impact of Development on Sites of Biodiversity and Geodiversity Importance), Policy DM11 (Protected Species), Policy DM12 (Mitigation, Enhancement, Management and Monitoring of Biodiversity) and Policy DM13 (Landscape Features); and
- Fordham Neighbourhood Plan (made December 2018) with particular reference to Policy 8(Wildlife and Habitats).

8.2.10 These policies identify the need for ecological surveys to inform the assessment of how biodiverse an area is and how much of an impact to biodiversity development will have on land within the DCO Site and to areas surrounding the DCO Site. In addition, they require the assessment to consider features of ecological interest and connectivity between habitats. The policies also identify measures to enhance biodiversity and adequately mitigate unavoidable impact on existing biodiversity.

8.2.11 With regards to enhancing and protecting biodiversity and connectivity, the policies require consideration of the impacts on biodiversity by assessing protected species and habitats that could be impacted by the Scheme. Attention is given to the habitats and species listed on the Cambridgeshire and Peterborough Biodiversity Action Plan (BAP) and Suffolk BAP. Consideration of sites of international, national and local importance is also necessary. Delivering a net gain and enhancing the network of habitats is also outlined in the policies.

Other Guidance

8.2.12 Other guidance documents relevant to the assessment of the impacts of the Scheme on ecology and nature conservation include:

- Cambridgeshire and Peterborough Biodiversity Action Plan (Ref 8-20) - The plan sets out action plans for 23 habitat types, 205 species and 66 species of additional interest within Cambridgeshire;
- Suffolk Biodiversity Action Plan (Ref 8-21) – The plan sets out action plans for 20 habitat types and for 59 species;
- Biodiversity 2020 - A strategy for England's Wildlife and Ecosystem Services with regards to marine habitats, ecosystems, and fisheries (Ref 8-22); and
- UK Post 2010 Biodiversity Framework: Revised Implementation Plan (2018 2020) (Ref 8-23) - Succeeds the UK Biodiversity Action Plan (UK BAP) (Joint Nature Conservation Committee (JNCC) and Defra, 2018) (the UK BAP list of 943 priority species and 56 habitats remains an important reference material which has been considered within this PEI Report).

8.3 Assessment Assumptions and Limitations

8.3.1 The information presented in this chapter reflects that obtained and evaluated at the time of reporting, and has referenced published data, records, and web-based information obtained to date.

8.3.2 Habitat and species information referenced in the assessment has been collected from site surveys undertaken on land within and around the DCO Site between 2018 and 2020, where permission to access the land has been obtained from landowners.

8.3.3 Where surveys are incomplete, these will continue through 2020 and into 2021, within appropriate seasonal windows. Where these survey data are currently incomplete or limited, and further work is required to inform the assessment, this is presented within Table 8-1.

8.3.4 Existing and forthcoming surveys will inform the ongoing development of the Landscape and Ecology Management Plan (LEMP), an outline version of which is provided in ***PEI Report Volume 2: Appendix 10I***, and compliance with which will be secured through a DCO Requirement. The LEMP includes a description of the Scheme, along with targeted landscape and biodiversity mitigation that has been incorporated into the design. This is an ongoing iterative process, with environmental specialists actively involved in its development, using the mitigation hierarchy to avoid impacts, incorporating mitigation for those that cannot be avoided, and incorporating opportunities for enhancement at the earliest possible stage.

8.3.5 The assessment of all the phases is based upon the design illustrated on the preliminary Parameter Plans (Figure 3-1 and 3-2).

8.4 Assessment Methodology

Study Area

8.4.1 The Scheme comprises the following key areas (Figures 3-1 and 3-2), located within the administrative areas of West Suffolk Council (WSC) and East Cambridgeshire District Council (ECDC):

- Solar Farm Sites:
  - Sunnica East Site A (within WSC and ECDC);
  - Sunnica East Site B (within WSC);
  - Sunnica West Site A (within ECDC); and
  - Sunnica West Site B (within ECDC).
- Associated electrical infrastructure for connection to the national transmission system comprise:
  - Grid Connection Route A ('A1' - connecting the Sunnica East Site A with the Sunnica East Site B (within WSC) and then 'A2' connecting to the Sunnica West Site A (predominantly within ECDC, with a small section in WSC));

- Grid Connection Route B ('B1' - connecting the Sunnica West Site A and Sunnica West Site B and 'B2' connecting to the Burwell National Grid Substation (all within ECDC)); and
- Burwell National Grid Substation Extension (within ECDC).

8.4.2 A description of the Scheme is provided in ***Chapter 3: Scheme Description***.

8.4.3 All designated sites, sensitive habitats, and species of importance that occur within the ecological Zone of Influence (ZoI) of the Scheme were considered in this assessment, the extent of ZoI varies according to the ecological receptor in question and with regard to the precautionary principle to ensure sufficient data were gathered to meet any design iterations which may change the likely ZoI used to undertake the impact assessment.

8.4.4 For this Scheme, the ecological ZoI is defined as follows:

- up to 10 kilometres (km) from the DCO Site for all European statutory designated sites of nature conservation value;
- up to 2km from the DCO Site for all national statutory designated sites of nature conservation value;
- up to 2km from the DCO Site for all non-statutory designated sites of nature conservation value;
- up to 2km from the DCO Site for records (within the last ten years) of protected and, or notable species and, or habitats;
- up to 2km from the DCO Site for aquatic receptors (habitats and species);
- up to 50 metres (m) from the DCO Site for notable habitats;
- up to 50m from the DCO Site for terrestrial and aquatic invertebrates;
- up to 50m from the DCO Site for Badger *Meles meles* and reptiles;
- up to 500m from the DCO Site for Great Crested Newt *Triturus cristatus*;
- up to 100m from the DCO Site for Water Vole *Arvicola amphibius* and Otter *Lutra lutra*;
- up to 50m from the DCO Site for bat roosts and notable foraging and commuting habitat;
- up to 50m from the DCO Site for breeding and wintering birds and their habitats (although species occurring within the DCO Site are given greater emphasis); and up to 500m from the DCO Site for specially protected breeding birds (such as those listed on Schedule 1 of the Wildlife & Countryside Act (1981, as amended).

8.4.5 The desk study enabled determination of appropriate study areas, within which all important ecological features requiring assessment, as well as ecological features that could be directly or indirectly affected by the Scheme, were subject to field survey. The study area varies according to the spatial characteristics of each species or habitat potentially impacted. The boundaries and zones for the Scheme study areas reflect standard industry good practice and the scoping distances that statutory consultees would typically expect to be considered for identification of features external to the Scheme that could be affected. This is informed by published guidance and

professional judgement. The scope of surveys and study areas were presented and discussed with consultees at ecology workshops.

Sources of Information

Desktop Research

8.4.6 A desk study was carried out to identify ecological designations and protected and, or notable habitats and species and scheduled invasive non-native species potentially relevant to the Scheme.

8.4.7 The approach taken to defining the desk study areas was based on first considering the likely ZoI of the Scheme on different ecological receptors and an understanding of the maximum distances that are typically expected to be considered by statutory consultees (paragraph 8.5.1).

8.4.8 The desk study included a search for:

- European Sites within 10km of the DCO Site as well as any Special Areas of Conservation (SACs) within 30km where bats are noted as the or one of the qualifying features;
- statutorily designated sites of national nature conservation value, e.g. Sites of Special Scientific Interest (SSSIs) and Local Nature Reserves (LNRs) within 2km of the DCO Site; and
- non-statutorily designated sites of nature conservation value, e.g. Local Wildlife Sites (LWSs), within 2 km of the DCO Site.

8.4.9 The Cambridgeshire & Peterborough Environmental Records Centre (CPERC) and Suffolk Biodiversity Information Service (SBIS) were contacted in December 2018 to gain information on pre-existing ecological information (*i.e.* records of protected and notable species and habitats within 2km of the DCO Site as well as any invasive non-native species). Fish, macroinvertebrate and macrophyte species records were obtained from the Environment Agency (EA).

8.4.10 In addition, online data resources were reviewed including:

- Multi-Agency Geographic Information Centre (MAGIC);
- JNCC website for details of Special Protection Areas (SPAs) including site information and designation details;
- National Biodiversity Network (NBN) Gateway; and
- Environment Agency National Fish Populations Database (NFPD).

8.4.11 Protected and notable habitats and species included those listed under Schedules 1, 5 and 8 of the WCA; Schedules 2, 4 and 5 of the Habitat Regulations; and species and habitats of principal importance for nature conservation in England listed under Section 41 of the NERC Act. Other habitats and species have also been considered and assessed on a case by case basis, *e.g*. those included in national, regional or local Red Data Books and Lists but not protected by legislation. This is consistent with the requirements of relevant planning policy.

8.4.12 Records of invasive non-native species, as listed under Schedule 9 of the WCA and as species of EU concern (EU IAS Regulation, 2014) (Ref 8-24),

were also collated and have been taken into account when assessing the potential ecological effects of the Scheme. The presence of such species is generally detrimental for ecology and the spread of such species may contravene legislation. Hence, it is essential to prevent the spread of any such invasive species outside of the Scheme or within it and the removal of such species may be desirable and beneficial for ecology. Likewise measures should be taken to ensure that such invasive species are not inadvertently brought onto the DCO site. Therefore, while the species concerned are not relevant ecological features for the purposes of Ecological Impact Assessment (EcIA), there is still a need to consider them in terms of their potential relevance to delivery of legislative compliance, for their potential to contribute to the amplification of any adverse effects arising from the Scheme, or their potential to conflict with objectives for ecological mitigation, compensation and enhancement.

Field Surveys

8.4.13 The requirement for ecological field surveys was determined following a Preliminary Ecological Appraisal (PEA) undertaken by AECOM in October 2018; and subsequently updated in 2019, to reflect changes in the DCO Site Boundary (included as ***PEI Report Volume 2: Appendix 8A***).

8.4.14 The PEA consisted of three components: the desktop study data review, a Phase 1 Habitat survey; and a survey for protected species and other species of conservation concern.

8.4.15 The Phase 1 Habitat survey followed the standard method '*Handbook for Phase 1 habitat survey: A technique for environmental audit*' (JNCC, 2010) (Ref 8-25). In summary, this comprised walking over the relevant study area discussed in Table 8-1 and recording the habitat types and boundary features present.

8.4.16 A protected species scoping survey was carried out in conjunction with the Phase 1 Habitat survey. This led to the recommendation of field surveys for certain protected or notable habitats and species. These were then undertaken to characterise the ecological baseline within the relevant study area discussed in Table 8-1.

8.4.17 Table 8-1 presents details of the coverage, date and status of the field surveys undertaken to date, and further planned surveys to be carried out as part of the biodiversity assessment.

Table 8-1: Summary of field surveys undertaken to date

Survey	*Study Area*	*Survey Methodology*	*Date of Survey Period*	*Further Baseline Surveys Required for the ES?*
Phase 1 Habitat	Main habitats within DCO Site and to a maximum of 50m from the DCO Site, where viewable or access permitted.	Walk over of the Study Area recording the habitat types and boundary features present following followed the standard method '*Handbook for Phase 1 habitat survey: A technique for environmental audit*' (JNCC, 2010) (Ref 8-25).	Commenced in November 2018, with updates to habitats within the DCO Site, which included surveys of new areas as a result of changes to the DCO Site Boundary, made in 2019.	Ground-truthing in some areas of Grid Connection Route A2 and B2, required to confirm habitat types and determine the potential for protected and/or notable species to be present.
Terrestrial Habitats and Flora (including invasive non-native species)	The areas of terrestrial habitat surveyed were identified from the initial Phase 1 habitat survey and desk study information. The study area is the DCO Site plus a 50m survey buffer, where access was available.	Grasslands were surveyed in accordance with the standard methodology for National Vegetation Classification (NVC) survey as detailed for grasslands in Rodwell (1992) (Ref 8-26). Surveys for arable flora involved walking field boundaries and comparable areas of marginal habitat to record notable species (Stroh *et al*., 2015 (Ref 8-27), Mcleod *et al*., 2017 (Ref 8-28), Byfield & Wilson, (2005) (Ref 8-29).	May and July 2019; with subsequent updates between May 2020 and ongoing, following changes to the DCO Site area.	Ground-truthing in some areas of Grid Connection Route A2 and B2 required to confirm habitat types and presence of protected and/or notable flora. Surveys in July/August 2020 of additional land added to the DCO Site area in Sunnica East A and Sunnica West A.
Aquatic surveys including the presence of	Aquatic habitats were identified for survey based on a review of Ordnance Survey maps, aerial photography, the Environment	Walking the length of watercourses and circumference of ponds to note down aquatic features of interest (Buglife, 2013) (Ref 8-30). Survey methodology	August to September 2019	Ground-truthing in some areas of Grid Connection Route B2 required, to

Survey	*Study Area*	*Survey Methodology*	*Date of Survey Period*	*Further Baseline Surveys Required for the ES?*
any invasive non-native species	Agency online catchment data explorer, site walkovers, Phase 1 Habitat Survey mapping and subsequent surveys (notably amphibian surveys) within the DCO Site and up to 500m.	was based on the method '*A Manual for the Survey and Evaluation of the Aquatic Plant and Invertebrate Assemblages of Grazing Marsh Ditch Systems'* (Buglife, 2013) (Ref 8-30).		confirm conditions of watercourse/waterbody and requirement for further survey.
Bats	DCO Site, to a maximum of 50m from the DCO Site boundary.	A preliminary roost appraisal (PRA) was undertaken of buildings and structures and mature trees, following guidance as described in the Bat Conservation Trust (BCT) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition'* (Collins, J. (ed.), 2016) (Ref 8-31). Surveys for bat activity were based on standard methodology for bat activity transect surveys as described in the BCT guidelines (Collins, 2016) (Ref 8-31).	April to October 2019	Assessment and if necessary, surveys of trees suitable for roosting bats within Grid Connection Routes A2 and B2 required.
Badger	DCO Site and to a maximum of 50m from the DCO Site boundary, where access permitted.	Surveys for Badger involved a walkover survey searching for signs of Badger activity as described in the Mammal Society publication, Surveying Badgers (Harris *et al.,* 1989) (Ref 8-32), and in the National Badger Survey methodology (Cresswell *et al.,* 1990) (Ref 8-33).	February to April 2019; and subsequent updates in December 2019, following changes to the DCO Site area.	Surveys for Badger setts within Grid Connection Routes A2 and B2 required.
Riparian mammals (including invasive non-	All waterbodies and watercourses, identified from Ordnance Survey maps, aerial photography, site walkovers and Phase 1 Habitat	Water Vole surveys involved searching watercourses for signs of Water Vole activity as described by Strachan *et al.,* (2011) (Ref 8-34) and Dean *et al.,*	May to August 2019; with subsequent updates between June and July 2020, following	Assessment and if necessary, surveys of watercourses within Grid

Survey	*Study Area*	*Survey Methodology*	*Date of Survey Period*	*Further Baseline Surveys Required for the ES?*
native species)	survey mapping as being potentially suitable for Water Vole and Otter within the DCO Site and to a maximum of 100m from the DCO Site boundary, where access permitted.	(2016) (Ref 8-35). Otter surveys involved searching watercourses for signs of Otter activity, following guidance in the New Rivers and Wildlife Handbook (RSPB, NRA & RSNC, 1994) (Ref 8-36); and '*Monitoring the Otter*' (Chanin, 2003) (Ref 8-37).	changes to the DCO Site area.	Connection Routes A2 and B2 required.
Wintering (non-breeding) Birds (including farmland birds)	DCO Site and to a maximum of 50m from the DCO Site boundary, where access permitted.	Wintering bird surveys utilised transect-based walkovers and vantage point surveys following methodology detailed in '*Bird Monitoring Methods'* (Gilbert *et al.*,1998) (Ref 8-38) and '*Bird Census Techniques'* (Bibby *et al*., 2000) (Ref 8-39).	November 2018 to March 2019; with subsequent updates between October 2019 to March 2020, following changes to the DCO Site area.	No further baseline surveys required.
Breeding Birds (including farmland birds)	DCO Site and to a maximum of 50m from the DCO Site boundary. Appropriate Scheme buffer for species specific surveys, *e.g*. Stone Curlew.	Surveys for breeding birds was based on a standard territory mapping methodology for surveying breeding birds as detailed in '*Bird Monitoring Methods'* (Gilbert *et al*.,1998) (Ref 8-38) and '*Bird Census Techniques'* (Bibby *et al.,* 2000) (Ref 8-39).	March to June 2019; and March to June 2020	No further baseline surveys required.
Reptiles	DCO Site and to a maximum of 50m from the DCO Site boundary, where access permitted.	Reptile surveys involved recording reptile species using artificial refugia in accordance with Froglife's Advice Sheet 10 for Reptile Surveys (Froglife, 1999) (Ref 8-40) and Natural England's Standing Advice Sheet for Reptiles (Natural England, 2015) (Ref 8-41).	May to June 2019; with subsequent updates in September to October 2019, following changes to the DCO Site area.	Ground-truthing in some areas of Grid Connection Route A2 and B2 required, to assess the potential of habitat to support reptile species.

Survey	*Study Area*	*Survey Methodology*	*Date of Survey Period*	*Further Baseline Surveys Required for the ES?*
Amphibians, including Great Crested Newt	All accessible areas of potentially suitable habitat within the DCO Site plus 500m comprising: - Habitat Suitability Index (HSI) surveys for 29 ponds / waterbodies; - eDNA samples taken and analysed for 11 ponds / waterbodies; and - standard field survey techniques to determine presence or absence (and population size, if required) used for one pond.	HSI evaluated suitability of ponds for Great Crested Newt following the methodology developed by Oldham *et al.* (2000) (Ref 8-42). E-DNA method strictly adhered to the standard survey technique for eDNA (Biggs, 2014) (Ref 8-43). Great Crested Newt presence or absence and population size surveys used torch, bottle-trapping and egg searching methods all recommended by Natural England (English Nature, 2001) (Ref 8-44).	HSI - Feb – May 2019 eDNA - Apr – May 2019 & June 2020 Presence or absence and population surveys - March – June 2020	Assessment (HSI) and if necessary, surveys of waterbodies within Grid Connection Routes A2 and B2 and 500m Scheme buffer.
Fish including any invasive non-native species	Based on a review of Environment Agency data	Environment Agency National Fish Populations Database (NFPD) (Ref 8-45).	January 2019	Completed pending data review
Terrestrial Invertebrates including any invasive non-native species	DCO Site and to a maximum of 50m from the DCO Site boundary, where access permitted.	Desk-based study using satellite imagery and the Phase 1 habitat map, was followed by three seasonal survey visits to evaluate the habitats on Site and potential of those habitats to support protected or notable terrestrial invertebrates. Pitfall trapping and direct searching was then undertaken in areas of the most suitable habitats.	May – October 2019 and May 2020, ongoing	Surveys to continue to August 2020.

Survey	*Study Area*	*Survey Methodology*	*Date of Survey Period*	*Further Baseline Surveys Required for the ES?*
Aquatic Macro-invertebrates including any invasive non-native species	Aquatic habitats were identified for survey were based on a review of Ordnance Survey maps, aerial photography, the Environment Agency online catchment data explorer (REF 8-25), site walkovers, Phase 1 Habitat Survey mapping and subsequent surveys (notably amphibian surveys) within the DCO Site and up to 500m for the DCO Site boundary.	Surveys for aquatic macro-invertebrates were carried out using the ditch survey method as detailed in Buglife (2013) (Ref 8-30).	August to September 2018	Ground-truthing in some aquatic areas of Grid Connection Route B2 required.

8.4.18 The field survey data obtained, up to August 2020, are reported in the following survey reports (included as technical appendices):

- Appendix 8A (2019) – PEA report;
- Appendix 8B (2020) – Terrestrial Habitats and Flora Report;
- Appendix 8C (2020) – Terrestrial Invertebrate Scoping Note;
- Appendix 8D (2020) – Aquatic Ecology Survey Report, including macroinvertebrates;
- Appendix 8E (2020) – Great Crested Newt Survey Report;
- Appendix 8F (2020) – Reptile Survey Report;
- Appendix 8G (2020) – Bat Survey Report;
- Appendix 8H (2020) –Breeding Birds Survey Report;
- Appendix 8I (2020) – Wintering Bird Survey Report;
- Appendix 8J (2020) – Badger Survey Report;
- Appendix 8K (2020) – Otter and Water Vole Survey Report;
- Appendix 8L (2020) – Habitats Regulations Assessment Screening Report

8.4.19 Full details of the study areas, survey methodologies, survey dates and guidance used for each survey are available in the reports as detailed above (and included as technical appendices (8A to 8L)); a summary of survey findings is provided further on in this chapter.

Impact Assessment Method

8.4.20 The impact assessment, detailed in this chapter, has been undertaken in accordance with best practice guidance for Ecological Impact Assessment (EcIA), issued by the Chartered Institute of Ecology and Environmental Management (CIEEM) entitled '*Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Costal and Marine'* (Ref 8-46) as summarised below. The aims of the ecology assessment are to:

- identify relevant ecological features (i.e. designated sites, habitats, species or ecosystems) which may be impacted;
- provide a scientifically rigorous and transparent assessment of the likely ecological impacts and resultant effects of the Scheme. Impacts and effects may be positive or negative;
- facilitate scientifically rigorous and transparent determination of the consequences of the Scheme in terms of national, regional and local policies relevant to nature conservation and biodiversity, where the level of detail provided is proportionate to the scale of the development and the complexity of its potential impacts; and
- set out what steps will be taken to adhere to legal requirements relating to the relevant ecological features concerned.

8.4.21 The principal steps involved in the CIEEM approach can be summarised as:

- ecological features that are both present and might be affected by the Scheme are identified (both those likely to be present at the time works begin and those predicted to be present at a set time in the future) through a combination of targeted desk-based study and field survey work to determine the relevant baseline conditions;
- the importance of the identified ecological features is evaluated, placing their relative biodiversity and nature conservation value into geographic context, which is then used to define the relevant ecological features that need to be considered further;
- the changes or perturbations predicted to result as a consequence of the Scheme (i.e. the potential impacts) and which could potentially affect relevant ecological features are identified and their nature described. Established best-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are also described and are taken into account;
- the likely effects (positive or negative) on relevant ecological features are then assessed, and where possible quantified;
- measures to avoid or reduce any predicted significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines) and if necessary, measures to compensate for effects on features of nature conservation importance are also included;
- any residual effects of the Scheme are reported; and
- scope for ecological enhancement is considered.

8.4.22 It is not necessary in the assessment to address all habitats and species with potential to occur in the relevant study area and instead the focus is on those that are "relevant" *i.e*. ecological features that are considered to be important and potentially affected by the Scheme. The CIEEM guidelines (Ref 8-46) makes clear that there is no need to "*carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable*". This does not mean that efforts should not be made to safeguard wider biodiversity and requirements for this have been considered. National policy documents emphasise the need to achieve net gains for nature and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution. These considerations have been applied to the assessment methodology in this chapter.

8.4.23 To support a focussed assessment, there is a need to determine the scale at which the relevant ecological features identified through the desk studies and field surveys undertaken for the Scheme are of value. The value of each relevant ecological feature has been defined with reference to the geographical level at which it matters.

8.4.24 The frames of reference used for this assessment, based on section 4.7 in the CIEEM guidelines (Ref 8-46) are:

- international (generally this is within a European context, reflecting the general availability of good data to allow cross-comparison);

- national (Great Britain, but considering the potential for certain ecological features to be more notable (of higher value) in England, with context relative to Great Britain as a whole);
- regional (East England);
- county (Cambridgeshire and Suffolk);
- district (ECDC and WSC); and
- local (biodiversity or geological features that do not meet criteria for valuation at a district or higher level, but that have sufficient value to merit retention or mitigation e.g. for purposes of ensuring no net loss of biodiversity).

8.4.25 Species populations are valued on the basis of their size, recognised status (such as recognised through published lists of species of conservation concern and designation of Biodiversity Action Plan (BAP) status) and legal protection. For example, bird populations exceeding 1% of published information on biogeographic populations are considered to be of international importance, those exceeding 1% of published data for national populations are considered to be of national importance and so on.

8.4.26 In assigning values to species populations, it is important to take into account the status of the species in terms of any legal protection. However, it is also important to consider other factors such as its distribution, rarity, population trends and the size of the population which would be affected. For example, whilst the Great Crested Newt is protected under European law and therefore conservation of the species is of significance at the international level, this does not mean that every population of Great Crested Newt is internationally important. It is important to consider the particular population in its context. Therefore, in assigning values to species the geographic scale at which they are important has been considered. The assessments of value rely on the professional opinion and judgment of experienced ecologists.

8.4.27 Plant communities are assessed both in terms of their intrinsic value and as habitat for protected species whose habitat is also specifically protected and for species of nature conservation concern which are particularly associated with them.

8.4.28 Due regard will also be paid to the legal protection afforded to species during the development of mitigation and compensation measures to be implemented for the Scheme. For European protected species there is a requirement that the Scheme should not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

8.4.29 Assessing the value of features requires consideration of both existing and future predicted baseline conditions. Therefore, the description and valuation of ecological features takes account of any likely changes, such as trends in the population size or distribution of species, likely changes to the extent of habitats and the effects of other proposed developments or land use changes; as explained in the 'Future Baseline' section below.

8.4.30 In line with section 1.21 in the CIEEM guidelines (Ref 8-47), the terminology used within the EcIA draws a clear distinction between the terms 'impact' and 'effect'. For the purposes of this EcIA these terms are defined as follows:

- impact – actions resulting in changes to an ecological feature. For example, construction activities of a development removing a hedgerow; and
- effect – outcome resulting from impact acting upon the conservation status or structure and function of an ecological feature, e.g. the effects on a population of bats as a result of the loss of a bat roost.

8.4.31 When describing potential impacts (and where relevant the resultant effects) consideration is given to the following characteristics likely to influence this:

- positive or negative - i.e. is the change likely to be in accordance with nature conservation objectives and policy and is that change:
  - positive - a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value; or
  - negative - a change that reduces the quality of the environment *e.g.* destruction of habitat.
- spatial extent - the spatial or geographical area or distance over which the impact or effect may occur under a suitably representative range of conditions;
- magnitude - the 'size', 'amount' or 'intensity' and 'volume' of an impact - this is described on a quantitative basis where possible;
- duration - the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
- timing and frequency - i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons; and
- reversibility - i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

8.4.32 Cumulative effects are those occurring from several sources (also known as inter-relationships) and, or the combined effects of other developments in the area.

8.4.33 For each ecological feature only those characteristics relevant to understanding the ecological effect of the Scheme and determining the significance are described. The determination of the significance of effects has been made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:

- not significant - no effect on structure and function, or conservation status; and
- significant - structure and function, or conservation status is affected.

8.4.34 Sections 5.24 to 5.28 in the CIEEM guidelines (Ref 8-46) states that effects should be determined as being significant when "*an effect either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national / local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)*".

8.4.35 Using this information and judgment, it is determined whether the effects will be significant or not on the structure and integrity (of site or ecosystems) or conservation status (of habitats and, or species) of each ecological feature and the impact significance is determined at the appropriate geographical scale.

8.4.36 There are a number of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines (Ref 8-47) recommend the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology within this PEI Report, the findings of the CIEEM assessment have been translated into the classification of effects scale, as outlined in Table 8-2.

Table 8-2: Relating CIEEM assessment terms to those used in other EIA chapters

Effect classification terminology used in other EIA chapters	*Equivalent CIEEM assessment*
Major beneficial	Beneficial effect on structure / function or conservation status at regional, national or international level.
Moderate beneficial	Beneficial effect on structure/ function or conservation status at County level.
Minor beneficial	Beneficial effect on structure / function or conservation status at Local level.
Neutral / Negligible	No effect on structure / function or conservation status.
Minor adverse	Adverse effect on structure / function or conservation status at Local level.

Effect classification terminology used in other EIA chapters	*Equivalent CIEEM assessment*
Moderate adverse	Adverse effect on structure / function or conservation status at County level.
Major adverse	Adverse effect on structure / function or conservation status at Regional, National or International level.

8.5 Stakeholder Engagement

8.5.1 Scoping opinion was sought from the Secretary of State through the Planning Inspectorate in 2019 as part of the EIA Scoping process. Further non-statutory consultation was undertaken in form of two workshops in July 2019 and December 2019. The purpose of these workshops was to provide consultees with updates on the progress of the Scheme and ecological surveys.

8.5.2 The following stakeholders were consulted during the EIA scoping process and non-statutory workshops:

- The Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire.
- Suffolk Wildlife Trust;
- Suffolk County Council;
- Cambridge County Council;
- West Suffolk Council;
- Natural England;
- East Cambridgeshire District Council; and
- Royal Society for Protection of Birds (RSPB).

8.5.3 Consultation to date has been outlined in Table 8-3.

Table 8-3: Main matters raised during consultation

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
Planning Inspectorate	Effects of the Grid Connection Routes A and B on ecological receptors during operation being scoped out not agreed: *"Applicant's proposed matters to scope out: Effects of the Grid Connection Routes A and B on ecological receptors during operation.* *The precise route, location, and area of land-take required for cabling associated with Grid Connection Routes A and B has not been fully defined in the Scoping Report; nor is the report clear on the extent of vegetation clearance/ tree removal that will be required to facilitate the proposed works. Therefore, the Inspectorate considers that there is insufficient information to support a decision to scope this matter out of the assessment. The ES should assess impacts to ecological receptors from the grid connection where significant effects are likely to occur."*	The EcIA has considered the effects of all grid connection routes on ecological receptors during operation.	See Section 8.9 of this chapter.
Planning Inspectorate	Queried the extent of Study area for bats: *"Study Area - Bats* *The desk study assessment includes a search for 'international nature conservation sites' within 10km of the proposed DCO boundary. The Inspectorate notes that within this area, the assessment identified records for a total of 13 bat species. The Scoping Report does*	The EcIA has considered appropriate zones of influence, including designated sites within 30 km (as per standard guidance) where bats are noted as the or one of the qualifying features	See Section 8.4.9 of this chapter.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
	not justify why the 10km study area is appropriate. The Inspectorate considers that the assessment study areas should be defined according to the extent of the anticipated impacts. *The ES should identify whether there are any SACs where bats are a qualifying feature located beyond 10km that should be considered when defining the potential zone of influence. Effort should be made to identify whether there are any functionally-linked bat habitats (including habitats used for roosting, foraging, and/or commuting) that connect the Proposed Development to offsite SACs. The use of functionally-linked land by other qualifying interest features should also be considered within the ES, including functional land used by qualifying bird species of the Breckland SPA.* *The Applicant should make effort to agree study areas with the relevant consultation bodies. The assessment study areas should be described in the ES and depicted on a supporting plan".*		
Planning Inspectorate	Appropriate study area for statutory sites: *"Statutory Sites* *Paragraph 8.4.2 of the Scoping Report does not specify the total number of statutory designated sites that were identified as a result of the desk assessment; nor does it clarify what study area was used to identify statutory*	The EcIA has considered appropriate zones of influence for statutory sites.	See Section 8.4.9 of this chapter.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
	designated sites (in contrast to paragraph 8.4.3 for 'Non-statutory sites'). The Applicant should make effort to agree the appropriate study area for statutory sites with relevant consultation bodies. The chosen study areas should be clearly presented in the ES".		
Planning Inspectorate	The ES should assess potential direct and indirect impact from the Proposed Development on Chippenham Fen Ramsar and NNR, Chippenham Fen and Snailwell Poor's Fen SSSI, and Fenland SAC, particularly through any changes in local hydrology and water quality: *"Statutory Sites - Chippenham Fen* *The Inspectorate notes that the Sunnica West (North) Site directly adjoins Chippenham Fen Ramsar and NNR, Chippenham Fen and Snailwell Poor's Fen SSSI, and Fenland SAC. The ES should assess potential direct and indirect impact from the Proposed Development (including cabling works) to the notified and qualifying features of this site, particularly through any changes in local hydrology and water quality where significant effects are likely".*	The EcIA has considered potential direct and indirect impacts on all designations at Chippenham Fen and Fenland SAC, including changes to hydrology and water quality.	See Section 8.9 of this chapter and ***Chapter 9: Flood Risk, Drainage and Water Resources***.
Planning Inspectorate	Impacts to farmland birds should be assessed: *" Additional Survey Requirements* *Given the scale and nature of the Proposed Development, the Inspectorate*	The EcIA has considered impacts to farmland birds, including Skylark *Alauda arvensis*, Corn Bunting *Emberiza calandra,* Yellowhammer *Emberiza citrinella* and Linnet *Linaria cannabina*.	See Section 8.9 of this chapter.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
	recommends that impacts to farmland birds should be assessed. If significant effects are identified, then appropriate options to mitigate these effects should be set out within the ES".		
Planning Inspectorate	Statutory bird strike safeguarding zones surrounding RAF Mildenhall and RAF Lakenheath.: *"Potential Effects and Mitigation* *The Scoping Report does not specifically consider the effects of solar panelling and associated infrastructure on birds, bats, and general ecology during the operation of the Proposed Development. The potential for the Proposed Development to attract or displace populations, and impacts associated with collision risk and barrier effects, should be assessed in the ES where significant effects are likely to occur.* *The Inspectorate also notes that (as further mentioned in ID 4.9.4 of this Opinion) the Proposed Development is located within the statutory birdstrike safeguarding zones surrounding RAF Mildenhall and RAF Lakenheath. Where significant effects are likely, the ES should assess the potential impacts of birdstrike on bird numbers and movements in the area.* *The ES should explain whether such risks may be minimised through the appropriate siting of infrastructure, appropriate timing*	The Scheme will not create habitat that will attract significant numbers of flocking birds that may pose a strike risk for aviation. The site also is not on a path connecting areas supporting significant numbers of birds that pose a risk to aviation, e.g. waterbirds.	See Section 8.6 of this chapter which sets out the ornithological baseline conditions.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
	of construction and maintenance, as well as biodiversity mitigation measures".		
Planning Inspectorate	Demonstrate the effort made to sensitively locate solar panels and associated infrastructure in order to avoid direct impacts on species and from habitat loss: "*Assumptions* *The Scoping Report states that "A precautionary approach has been taken at this stage which assumes that all habitats within the footprint of the solar PV modules and associated solar and battery storage infrastructure will be permanently lost during construction".* *The Scoping Report does not address how the Proposed Development will be sited or managed in order to avoid (and where unavoidable, minimise) impacts to protected species and their habitats. The proposed DCO boundary (Figure 1-2) transects a number of important habitats such as hedgerows and woodland, which the Inspectorate considers could be avoided through considered siting of infrastructure and deviation of cable routes.* *The ES should demonstrate the effort made to sensitively locate solar panels and associated infrastructure in order to avoid direct impacts on species and from habitat loss. Any habitat lost as a result of the Proposed Development should be*	The mitigation hierarchy (as defined by CIEEM) has been followed when developing the Scheme design and parameters.	See Section 8.8 which sets out the preliminary embedded mitigation, including avoidance measures and Figures 3-1 and 3-2: Parameter Plans.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
	identified according to type and the area of loss which should include any anticipated vegetation/ tree clearance. Any avoidance or mitigation measures proposed should be described in the ES and details provided to explain how such measures will be secured".		
East Cambridgeshire District Council	Full surveys for all species mentioned in the Scoping Report.	Full surveys for ecological receptors have been undertaken.	See Section 8.4 of this chapter.
East Cambridgeshire District Council	Scope in how the proposal will lead to an ecological net gain.	The Scheme has incorporated the principles of biodiversity net gain.	A biodiversity net gain analysis will be included within the ES and the principle will be enshrined through the measures in the LEMP which will be secured through the DCO.
Environment Agency	Planting of native hedges on site to provide habitat and wildlife corridors.	Native hedgerow planting has been incorporated throughout the Scheme.	See Section 8.8 which sets out the preliminary embedded mitigation and Figures 3-1 and 3-2: Parameter Plans which set out the environmental masterplan for the Scheme and which will be enshrined through the measures in the LEMP which will be secured through the DCO.
Ministry of Defence	The development site also occupies the statutory bird strike safeguarding zones surrounding both RAF Mildenhall and RAF Lakenheath.	The Scheme will not create habitat that will attract significant numbers of flocking birds that may pose a strike risk for aviation. The site also is not on a path connecting areas	See Section 8.6 of this chapter which sets out the ornithological baseline conditions.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
		supporting significant numbers of birds that pose a risk to aviation, e.g. waterbirds.	
Natural England	The potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance.	The EcIA has considered the potential impacts of the Scheme on nature conservation interest and opportunities for habitat creation and enhancement.	Throughout this chapter.
Natural England	EcIA is the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components.	The EcIA has followed CIEEM guidance for EcIA.	See Section 8.4 of the chapter.
Natural England	The NPPF sets out guidance in paragraphs 174-177 on how to take account of biodiversity interests in planning decisions and the framework that local authorities should provide to assist developers.	The EcIA has considered all relevant biodiversity legislation and policy.	See Section 8.2 of this chapter.
Natural England	The requirement and extent of ecological surveys will be informed by the desk study data and the PEA, together with AECOM's professional judgement and local knowledge of the geographical area and range of important ecological features.	Full surveys for ecological receptors have been and will continue to be undertaken.	See Section 8.4 of this chapter.
Natural England	ES to thoroughly assess the potential impacts to designated sites, including candidate sites.	All designated and proposed European sites have been considered in the EcIA.	See Section 8.9 of this chapter.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
Natural England	Appropriate assessment needs to be undertaken in respect of any plan or project which is likely to have a significant effect on a European site.	A Habitats Regulations Screening Report has been undertaken and a Habitats Regulations Report will be submitted with the DCO application.	See ***PEI Report Volume 2: Appendix 8L***.
Natural England	We are satisfied that section 8.4.2 and Table 8.1 of the Scoping Report has scoped in the relevant nature conservation sites for detailed consideration through the EIA.	These sites have been considered in the EcIA.	See Section 8.6 onwards, of this chapter.
Natural England	Chippenham Fen - The ES will need to carefully assess potential direct and indirect impacts to the notified and qualifying features of this site, particularly through any changes in local hydrology and water quality.	The EcIA has considered potential direct and indirect impacts on Chippenham Fen, including changes to hydrology and water quality.	See Section 8.9 of this chapter and ***Chapter 9: Flood Risk, Drainage and Water Resources***.
Natural England	A full assessment of the direct and indirect effects of all aspects of the development.	The EcIA has considered the effects of all aspects of the Scheme on ecological receptors.	See Section 8.9 of this chapter.
Natural England	Assessment of impacts to functional land for Breckland SPA birds.	The EcIA and Habitats Regulation Assessment (HRA) Screening Report has considered impacts on the Breckland SPA.	See Section 8.6 for baseline conditions and Section 8.9 of this chapter, along with ***PEI Report Volume 2: Appendix 8L***.
Natural England	Preparation of a Framework Construction Environmental Management Plan (CEMP) and framework LEMP to accompany the DCO application.	A Framework CEMP and LEMP will be submitted with the DCO application.	-

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
Natural England	Notes the proposal to prepare an HRA Screening Report in accordance with the requirements of the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) and that this will be provided with the DCO application.	An HRA Screening Report will be submitted.	See ***PEI Report Volume 2: Appendix 8L***
Natural England	Support the proposal to consider the effects of the proposed scheme on relevant local wildlife sites.	The EcIA has considered the potential impacts on local wildlife sites.	See Section 8.9 of this chapter.
Natural England	Welcomes the applicant's proposal to meet with the local Wildlife Trusts, and other relevant stakeholders, to seek their advice on the Proposed Scheme.	Two workshops, with Natural England in attendance, held in July 2019 and December 2019	See Section 8.5.1 of this chapter.
Natural England	Impacts to farmland birds should be assessed.	The EcIA has considered impacts to farmland birds as part of breeding and wintering (non-breeding) bird surveys.	See Section 8.9 of this chapter.
Natural England	Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, groups and individuals.	The EcIA has collated relevant data from appropriate sources.	See Section 8.4 of this chapter.
Natural England	European Protected Species (EPS) mitigation licences prepared in draft for advisory comment from Natural England, all of which will form part of the DCO application for the Scheme.	If required, EPS mitigation licences will be provided in draft to Natural England alongside the DCO submission in order that Letters of No Impediment can be issued by Natural England.	-
Natural England	Assess the impact of the proposals on habitats and/or species listed as 'Habitats and Species of Principal Importance'	The EcIA has considered the effects of all aspects of the Scheme on national and local priority species.	See Section 8.9 of this chapter.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
	within the England Biodiversity List and Local Biodiversity Action Plans.		
Natural England	Advises that a habitat survey (equivalent to Phase 2) is carried out on the site, in order to identify any important habitats present. In addition, ornithological, botanical and invertebrate surveys should be undertaken.	Full surveys for ecological receptors have been and will continue to be undertaken.	See Section 8.4 of this chapter.
Natural England	The development should seek if possible, to avoid adverse impact on sensitive areas for wildlife within the site, and if possible, provide opportunities for overall wildlife gain.	The mitigation hierarchy (as defined by CIEEM) has been followed when developing the Scheme design and parameters. The Scheme has incorporated the principles of biodiversity net gain.	See Section 8.8 which sets out the preliminary embedded mitigation, including avoidance measures and Figures 3-1 and 3-2: Parameter Plans. A biodiversity net gain analysis will be included within the ES.
Natural England	Natural England does not hold local information on local sites, local landscape character and local or national biodiversity priority habitats and species.	The EcIA has collated relevant data from appropriate sources including Cambridgeshire & Peterborough Environmental Records Centre (CPERC) and Suffolk Biodiversity Information Service (SBIS).	See Section 8.4 of this chapter.
Natural England	The assessment should take account of the risks of air pollution and how these can be managed or reduced.	Air quality is scoped out of the assessment except for dust (for which a risk assessment and mitigation measures will be covered within the Framework CEMP which will specifically refer to ecological receptors and will be included in the Statutory Consultation version.	See Section 8.8 onwards, of this chapter.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
Natural England	The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained.	Climate change will be considered when finalising details of mitigation and enhancement to ensure that habitats and species are resilient to future climatic conditions.	See Section 8.8. of this chapter.
Natural England	Opportunities for landscaping, biodiversity enhancements and habitat management in areas around the arrays and on other land within the Scheme Boundary.	Opportunities for biodiversity enhancement have been embedded within the Scheme.	See Section 8.8 which sets out the preliminary embedded mitigation and Figures 3-1 and 3-2: Parameter Plans which set out the environmental masterplan for the Scheme.
Natural England	Demonstrate delivery of significant net biodiversity gain.	The Scheme has incorporated the principles of biodiversity net gain.	A biodiversity net gain analysis will be included within the ES.
Natural England	Delivery of landscape scale biodiversity enhancements.	Opportunities for biodiversity enhancement at appropriate landscape scales have been embedded within the Scheme.	See Section 8.8 which sets out the preliminary embedded mitigation and Figures 3-1 and 3-2: Parameter Plans which set out the environmental masterplan for the Scheme.
Suffolk County Council / West Suffolk Council	Consider the need to include survey of agricultural field margins for rare plants within the scope of the additional survey.	Botanical surveys including those for arable flora and arable margins, undertaken.	See Section 8.4 of this chapter.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
Suffolk County Council / West Suffolk Council	Site-specific plan for managing biodiversity.	The Strategic Environmental Masterplan is shown in the parameter plans in Figures 3-1 and 3-2. A LEMP will be submitted with the DCO application.	See Section 8.8 which sets out the preliminary embedded mitigation and Figures 3-1 and 3-2: Parameter Plans which set out the environmental masterplan for the Scheme.
Suffolk County Council / West Suffolk Council	EcIA process and potential impacts.	The EcIA has followed CIEEM guidance for EcIA. The EcIA has considered the effects of all aspects of the Scheme on ecological receptors.	See Section 8.4 of this chapter. See Section 8.9 of this chapter.
Suffolk County Council / West Suffolk Council	Appropriate mitigation strategies and post construction monitoring programme.	The EcIA has considered appropriate mitigation strategies relevant to ecological features present. A post construction monitoring programme will be developed and submitted with the ES as part of the LEMP.	See Section 8.8 of this chapter.
Suffolk County Council / West Suffolk Council	All records should be submitted to relevant Records Office	An appropriate format will be agreed for submission of ecological information.	-
Suffolk County Council / West Suffolk Council	A LEMP, for the lifetime of the project should be submitted.	The Strategic Environmental Masterplan is shown in the parameter plans in Figures 3-1 and 3-2. A LEMP will be submitted with the DCO application.	See Section 8.8 which sets out the preliminary embedded mitigation and Figures 3-1 and 3-2: Parameter Plans which set out the environmental masterplan for the Scheme.

Consultee	*Main matter raised*	*How has the concern been addressed*	*Location of response in chapter*
Suffolk County Council / West Suffolk Council	Demonstrate delivery of significant net biodiversity gain.	The Scheme has incorporated the principles of biodiversity net gain.	A biodiversity net gain analysis will be included within the ES.
The Wildlife Trust for Bedfordshire, Cambridgeshire & Northamptonshire	Significant and meaningful level of biodiversity net gain.	The Scheme has incorporated the principles of biodiversity net gain.	A biodiversity net gain analysis will be included within the ES.
The Wildlife Trust for Bedfordshire, Cambridgeshire & Northamptonshire	Following the mitigation hierarchy for County Wildlife Sites.	The mitigation hierarchy (as defined by CIEEM) has been followed when developing the Scheme design and parameters. This has included avoiding impacts on County Wildlife Sites.	See Section 8.8 which sets out the preliminary embedded mitigation, including avoidance measures and Figures 3-1 and 3-2: Parameter Plans.

8.6 Baseline Conditions

8.6.1 This section provides a description of the ecological baseline, collected as of August 2020, within the DCO Site and identifies important ecological features.

Existing Baseline

Statutory Sites

8.6.2 There are 15 statutory sites for nature conservation within the ZoI set out in Section 8.4.4 of this chapter. These sites, designated for biodiversity reasons, are detailed in Table 8-4 (and shown in ***PEI Report Volume 2: Appendix 8A***) and are listed in descending order, with those closest to the Scheme listed first.

8.6.3 Fenland SAC, Chippenham Fen Ramsar/NNR and Chippenham Fen and Snailwell Poor's Fen SSSI are directly adjacent to the north of the Sunnica West Site B; and Snailwell Meadows SSSI is directly adjacent to the south of the Sunnica West Site B.

8.6.4 There are no international statutory site designations for bats within 30km of the Scheme.

Table 8-4: Statutorily Designated Sites within 10 km (international) and 2 km (national) of the DCO Site

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
Chippenham Fen and Snailwell Poor's Fen	Fenland SAC, Chippenham Fen Ramsar / NNR, Chippenham Fen and Snailwell Poor's Fen SSSI	A spring-fed calcareous basin mire with a long history of management, which is partly reflected in the diversity of present-day vegetation. The invertebrate fauna is very rich, partly due to its transitional position between Fenland and Breckland. The site supports diverse vegetation types, rare and scarce plants. The site is the stronghold of Cambridge Milk Parsley *Selinum carvifolia*.	Directly adjacent to the north of the Sunnica West Site B.	International / National
Snailwell Meadows	SSSI	The meadows support a range of grassland community types ranging from dry calcareous pasture through wet neutral grassland to marshy grassland with acidic influences typical of fen edge pastures. Such community types are essentially southern in their national distribution and are rare in a Cambridgeshire context.	Directly adjacent to the south of the Sunnica West Site B.	National
Brackland Rough	SSSI	A damp valley woodland, the site holds stands of Alder *Alnus glutinosa*, a woodland type rare in Cambridgeshire and becoming scarce throughout its natural range in lowland Britain.	Approximately 160m north of the Grid Connection Route B2 and approximately 350m north-west of the Sunnica West Site B.	National
Red Lodge Heath	SSSI	This site supports a nationally important assemblage of invertebrates, including nationally rare Five-banded Digger Wasp *Cerceris quinquefasciata.*	Approximately 750m south east of the Sunnica East Site B and c. 740m east of the Grid Connection Route A2.	National
Cherry Hill and The	SSSI	The site lies on calcareous soils at the southern edge of Breckland. The soil is a typical flinty Breckland sand with fragments of chalk. Unimproved calcareous grassland has	Approximately 1.0km east of the Sunnica East Site B.	National

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
Gallops, Barton Mills		developed on the wide roadside verges within the site. The species-rich grassland flora includes an outstanding assemblage of nationally rare plants.		
Newmarket Heath	SSSI	This site lies on the Middle Chalk near Newmarket. It is by far the largest expanse of unimproved chalk grassland remaining in Cambridgeshire. Newmarket Heath is of particular importance for the presence of areas of chalk heath, a rare vegetation type in Britain as a whole. This is the sole Cambridgeshire example and is of great geographical importance in providing a link between the Brecklands heaths and the chalk heaths of the Chilterns. There is a high diversity of flowering plants, including a large population of a nationally rare species listed in the British Red Data Book and at least five nationally uncommon species.	Approximately 1.1km south-west of the Sunnica West Site A.	National
Devil's Dyke	SSSI	The site holds one of the best and most extensive areas of species-rich chalk grassland in Cambridgeshire and a similarly extensive area of chalk scrub grading into woodland to the east.	Approximately 1.4km south west of the Burwell National Grid substation extension.	National
Breckland	Breckland SPA Breckland Forest SSSI	The site is used regularly by 1% or more of the UK breeding populations of Stone Curlew *Burhinus oedicnemus*, Nightjar *Caprimulgus europaeus* and Woodlark *Lullula arborea*.	Approximately 1.4km north east of the Sunnica East Site B.	International and National
Wicken Fen	Wicken Fen Ramsar, Fenland SAC Wicken Fen SSSI, NNR (just outside 2km study area)	The site supports diverse vegetation types, rare and scarce plants. The site supports one species of British Red Data Book plant, Fen Violet *Viola persicifolia*, which survives at only two other sites in Britain. It also contains eight nationally scarce plants and 121 British Red Data Book invertebrates.	Approximately 2.1km north west of the Grid Connection Route B2 and approximately 2.6km north west of the Burwell National Grid Substation Extension.	International and National

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
Rex Graham Reserve	SAC, SSSI	This long-disused chalk-pit supports the largest wild population of a nationally rare plant given special protection under Section 13 of the Wildlife and Countryside Act 1981.	Approximately 3.0km north east of the Sunnica East Site B.	International and National
Breckland	Breckland SAC	The site is designated primarily for its inland dunes, natural eutrophic lakes, European dry heaths and semi-dry grasslands, and also alluvial forests and Great Crested Newts.	Approximately 3.1km east of the Sunnica East Site B.	International
Devil's Dyke	SAC	The site holds one of the best and most extensive areas of species-rich chalk grassland in Cambridgeshire and a similarly extensive area of chalk scrub grading into woodland to the east.	Approximately 4.5km south west of the Burwell National Grid Substation Extension.	International

Non-Statutory Sites

8.6.5 There are 31 non-statutory sites designated for nature conservation within 2km of the DCO Site (as per the study area in Section 8.4.4 of this chapter). Of these, 26 sites have been designated as County Wildlife Sites (CWS) for their biodiversity value at a county level and are known to have supporting value to a wide variety of protected and ecologically important species and/or habitats; there are two Local Nature Reserves (LNR); two sites designated as a Protected Road Verge (PRV) for their ecological importance and one Roadside Nature Reserve (RNR). These sites are detailed in Table 8-5 (and shown in ***PEI Report Volume 2: Appendix 8A***) and are listed in descending order, with those closest to the DCO Site boundary listed first.

Table 8-5: Non-statutory sites within 2 km of the DCO Site

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
Havacre Meadows and Deal Nook	CWS	This site contains semi-improved grassland, woodland, scrub and open water in close association. The site also contains willow carr of the NVC Alder *Alnus* – Stinging Nettle *Urtica dioica* woodland community (W6).	The cable route corridor for Grid Connection Route A2 runs through the CWS.	County
Badlingham Lane	CWS	Verges within this site support species-rich flora characteristic of a breckland habitat including Sainfoin *Onobrychis* which is listed as near threatened within Suffolk's Rare Plant Register (SRPR). The site also supports a small population of Sand Catchfly *Silene conica*, a plant listed in the Red Data Book and as nationally scarce within SRPR.	The CWS lies within the northern section of the Sunnica East Site B.	County
Worlington Heath	CWS	The site contains lowland heathland (Priority habitat) and dry grassland that has had historical records of Marsh Stitchwort *Stellaria palustris* (Priority species included within SRPR). Wet hollows within the site also support Bog Pimpernel *Anagallis tenella* and Marsh Speedwell *Veronica scutellata* (locally scarce and included within the SRPR). The site also contains small pockets of scrub and mature hedge (priority habitat).	The CWS lies within the northern section of the Sunnica East Site B.	County
Chippenham Gravel Pit	CWS	The site supports populations of Nationally Scarce vascular pant species (Bearded Fescue *Vulpia ciliate* subspecies *ambigua*, Fine-leaved Fumitory *Fumaria parviflora* and Bur Medick *Medicago minima*) and County Rare vascular plant species (Smooth Cat's-ear *Hypochaeris glabra*, Small Cudweed *Filago minima* and Clustered Clover *Trifolium glomeratum*). The site also qualifies as a Grade C Site in the JNCC Invertebrate Site Register.	The CWS is adjacent to the Sunnica West Site A.	County
Snailwell Grasslands and Woods	CWS	The site forms a habitat mosaic more than ten hectares in size which contains three or more of the listed habitats in close association. The marshy grassland contains more than 0.05 ha of a good example of the NVC M22 Blunt-flowered Rush *Juncus*	The CWS (River Snail section) runs through the western section of the Sunnica West Site B.	County

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
		subnodulosus – Marsh Thistle *Cirsium palustre* community. The woodland contains approximately 0.5 ha of the NVC Alder – Stinging Nettle community.		
Halfmoon Plantation Pit	CWS	The site supports populations of Nationally Rare Smooth Rupturewort *Herniaria glabra*, Nationally Scarce vascular plant species and rare county vascular plant species.	The CWS is directly adjacent to the north of the Sunnica West Site A.	County
Chippenham Avenue Fields	CWS	Two arable fields. Grass-poly *Lythrum hyssopifolia* (Nationally Rare vascular plant species) is found in about half a dozen hollows in the two fields.	The southern field of the CWS is directly adjacent to the Sunnica West Site A.	County
Worlington Golf Course and Surrounding Habitat	CWS	The site supports areas of considerable botanical interest and support a range of Breckland plants including Spanish catchfly *Silene otites* (biodiversity priority species) and Bastard toadflax *Comandra umbellata* (two nationally rare species). Other biodiversity priority species recorded on-site include rare-spring sedge *Carex ericetorum* and purple milk-vetch *Astragalus danicus.* Mixed woodland with dense shrub layer supports Nightingales *Luscinia megarhynchos* and Goldcrest *Regulus*. Additionally, arable field margins (biodiversity priority habitat) buffer the golf course along its eastern and south-western edges. Lowland heath/Breck grassland, pond/open water, hedge/scrub, marshy grassland, semi-natural and plantation woodland and wet woodland (biodiversity priority habitats) can be found on and neighbouring the golf course.	The CWS lies adjacent to (within 10m) the northern section of the Sunnica East Site B.	County
Chippenham Park	CWS	The site contains more than 0.05 ha of NVC Common Knapweed – Crested Dog's-tail grassland community and pasture woodland with more than five mature and over mature trees per hectare. The grassland also meets species richness criteria, with frequent numbers of eight neutral grassland indicators.	The CWS lies approximately 10m west of the Sunnica West Site A.	County

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
Joan's Meadow	CWS	A lowland heathland site (biodiversity priority habitat) and a valuable example of short open Breckland grassland. Species include Sickle medick *Medicago falcata*, Small scabious *Scabiosa columbaria*, Field mouse-ear *Cerastium arvense* and Basil thyme *Acinos arvensis* (included within SRPR the latter also being a biodiversity priority species). Lichens, butterflies, owls, House Martin *Delichon urbicum*, Yellowhammer *Emberiza citrinella* (biodiversity priority species) and bats have all been associated with this site.	The CWS lies approximately 15m from the northern section of the Sunnica East Site B.	County
Barton Mills Chalk Pit	CWS	This active chalk quarry and landfill site supports calcareous grassland, a scarce and decreasing (biodiversity priority) habitat in Suffolk. Additionally, records of Basil thyme (biodiversity priority species) have been recorded here.	The CWS lies approximately 35m east of the Sunnica East Site B.	County
The Limekilns and Adjacent Areas	CWS	The site supports at least 0.05 ha of CG3 Upright Brome grassland and 0.05 ha of MG5 Crested Dog's-tail *Cynosurus cristatus* – Black Knapweed *Centaurea nigra* grassland. Also supports six or more strong calcareous grassland indicator species and a vascular plant species which is rare in the county.	The CWS is approximately 70m to the south of the Sunnica West Site A, on the southern side of the A14.	County
Red Lodge Warren	CWS	The site supports a valuable Breckland grassland community that includes Purple Fescue *Vulpia ciliata var. ambigua*, a nationally scarce plant (recorded in l5 l00 km squares in the UK).	The CWS lies approximately 410m east of the Sunnica East Site B.	County
Old Rectory Meadows	CWS	The site supports frequent numbers of at least eight neutral grassland indicator species.	The CWS lies approximately 430m west of the Sunnica West Site A.	County
Worlington Chalk Pit	CWS	The site supports a diverse flora typical of an herb-rich chalk grassland. Many of the species recorded here are rare in Suffolk such as Cat mint *Nepeta*, Night-flowering catchfly *Silene noctiflora* and Basil thyme all of which are included within SRPR and the latter is also a biodiversity priority species. Broad-leaved cudweed	The CWS lies approximately 435m south east of the Sunnica East Site B.	County

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
		Filago pyramidata also recorded here is a biodiversity priority species, included with the SRPR and considered endangered and only found in this location. Invertebrate interest is high and of particular note are the Scarce-four-dot Pin-palp beetle *Bembidion quadripustulatum* and Cinnabar moth *Tyria jacobaeae*, both of which are biodiversity priority species.		
New River and Monk's Lode	CWS	The site supports more than ten submerged, floating, emergent and wet bank species per 20 m stretch. Also, both ends of the site are well managed and continue to display a good flora that meets the qualifying criteria.	The CWS lies approximately 615m north of Grid Connection Route B2.	County
Burwell Brick Pit	CWS	The site supports naturally regenerating grasslands, scrub, marshy, grassland, swamp and open water.	The CWS lies approximately 665m north west of the Grid Connection Route B2.	County
Snailwell (south of the stud to the railway)	PRV	Neutral / calcareous grassland, presence of a local red data book species.	The PRV is located approximately 700m west of the Sunnica West Site A.	County
Spring Close	CWS	The site supports frequent numbers of at least 8 neutral grassland indicator species.	The CWS lies approximately 840m south east of the Burwell National Grid Substation Extension.	County
Criteria 1 - Cherry Hill & the Gallops SSSI	RNR	Flat bank with rare Breckland plants	The RNR lies approximately 980m east of the Sunnica East Site B.	County
Kennett Churchyard	CWS	The site supports frequent numbers of at least eight neutral grassland indicator species.	The CWS lies approximately 1.1km east of the Sunnica West Site A.	County

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
Norah Hanbury-Kelk Memorial Meadows	CWS	The sites provide suitable conditions for a rich assemblage of wetland wildlife. Snipe *Gallinago gallinago*, Gadwall *Anas strepera*, Lapwing *Vanellus vanellus* and Redshank *Tringa totanus* breed here. Of particular value on this site is a colony of Early Marsh Orchid *Dactylorhiza incarnata*, an uncommon plant in Suffolk and a biodiversity priority species. Other biodiversity priority species include, Reed Bunting *Emberiza schoeniclus*, Bullfinch *Pyrrhula pyrrhula*, Yellowhammer, Common Toad *Bufo bufo*, Grass Snake *Natrix helvetica* and Water Vole.	The CWS lies approximately 1.1km north of the Sunnica East Site B.	County
Chippenham	PRV	This protected road verge contains Neutral grassland	The PRV lies approximately 1.2km south of the Sunnica East Site A.	County
Freckenham Road RSV	CWS	This site supports populations of Nationally Rare (Spanish Catchfly *Silene otites*) and Nationally Scarce (Sickle Medick *Medicago sativa* ssp. *Falcata*) vascular plant species.	The CWS lies approximately 1.2km south of the Sunnica East Site A.	County
Pauline's Swamp	CWS	The site contains at least 0.25 ha of the NVC Meadowsweet *Filipendula ulmaria* – Wild Angelica *sylvestris* mire community (M27). It also has a pond with beds of Stoneworts *Charales*.	The CWS lies approximately 1.2km south of the Burwell National Grid Substation Extension.	County
Isleham	LNR	The site is a disused railway with species rich chalk grassland and hedgerows.	The CWS lies approximately 1.3km west of the Sunnica East Site A.	County
Barton Mills	LNR	The Riverside Reserve is a mosaic of six different habitats. Reedbeds, sedge areas, alder carr, willow carr, river valley habitat.	The CWS lies 1.4km north east of the Sunnica East Site B.	County
Mildenhall Woods	CWS	Mixed woodland and grassland	The CWS lies approximately 1.4km north-east of the Sunnica East Site B.	County

Site Name	*Designation*	*Description*	*Distance and Direction from the closest point of the DCO Site*	*Value*
Burwell Disused Railway	CWS	The site contains at least 0.05 ha of the NVC Upright Brome *Bromus erectus* grassland community (CG3) and supports a population of a Nationally Rare vascular plant species. Additionally, it also supports frequent numbers of at least 6 strong and 16 strong or weak calcareous grassland indicator species. The site also supports one of the five largest colonies in the county of nationally declining Small Blue *Cupido minimus* and Chalk-hill Blue *Polyommatus coridon* butterflies.	The CWS lies approximately 1.4km south of the Burwell National Grid Substation Extension.	County
Barton Mills Meadows	CWS	The site supports a rich assemblage of wetland plants including the Scarce Adder's-tongue Fern *Ophioglossum vulgatum*, Heath Spotted Orchid *Dactylorhiza maculata*, Water Avens *Geum rivale* and Early marsh orchid (the latter included within SRPR and considered locally scarce). The site also supports 38 species of moth including eight biodiversity priority species.	The CWS lies approximately 1.9km north east of the Sunnica East Site B.	County
RNR 96	CWS	Wild Grape Hyacinth *Muscari neglectum*	The CWS lies approximately 1.9km east of the Sunnica East Site B.	County

Species Records

8.6.6 The data search, obtained in December 2018 from CPERC and SBIS, returned records of protected and notable species using the 2km search radius from the DCO Site and from the preceding 10 years. These protected and notable species, including species of conservation importance, can be reviewed in the PEA report provided as ***PEI Report Volume 2: Appendix 8A*** and Aquatic Ecology Survey Report provided in ***PEI Report Volume 2: Appendix 8D***.

Habitats

8.6.7 The habitats listed in Table 8-6 were recorded during the PEA survey undertaken in 2018 and 2019 within the DCO Site (see ***PEI Report Volume 2: Appendix 8A***) and further defined by detailed habitat surveys undertaken in 2019 and 2020.

Table 8-6: Habitat types within DCO Site

Habitat	*Area (ha) / length (m)*	*% of Site area*	*Notable Habitat?*	*Biodiversity Importance*	*Rationale*
Woodland - Broad-leaved plantation	9.2 ha	0.7	No	Local	Not a habitat of principal importance
Woodland - Coniferous plantation	8.2 ha	0.6	No	Local	Not a habitat of principal importance
Woodland -Broad-leaved semi-natural	17.9 ha	1.4	Local Biodiversity Action Plan (LBAP) Habitat; Lowland Mixed Deciduous Woodland – Habitat of Principal Importance	Up to District	Isolated pockets of mature semi-natural woodland throughout the Scheme.
Woodland - Mixed plantation / semi-natural	21.0 ha	1.6	No	Local	Not a habitat of principal importance
Grassland - Unimproved Acid	10.7 ha	0.5	LBAP, Habitat of principal importance	County	Sunnica East Site B - Approximately 10.7 ha of lowland dry acid grassland priority habitat including *Festuca ovina-Agrostis capillaris-Rumex acetosa* grassland and *Carex arenaria* dune community. Three Nationally Scarce species recorded during the survey in these areas; Bearded Fescue, Sand Catchfly and Bur Medick and a NERC Act Section 41 species Annual Knawel *Scleranthus annuus*. Meets the criteria for Suffolk BIS, 2010 (Ref 8-21) Habitat and species of principal importance within Section 41 of the NERC Act (2006). Plant species associated with this

Habitat	Area (ha) / length (m)	% of Site area	Notable Habitat?	Biodiversity Importance	Rationale
					habitat type are considered as receptors in Table 8-7.
Grassland - Semi-improved Acid grassland	4.5 ha	0.4	LBAP, Habitat of principal importance	District	Due to its small size, it would not meet County Wildlife Site level criteria (Cambridgeshire & Peterborough Panel, 2014) (Ref 8-48), but it is of higher than local importance due to the lack of this type of habitat within the DCO Site.
Grassland - Semi-improved calcareous	0.8 ha	0.1	LBAP, Habitat of Principal Importance	District	Due to its small size, it would not meet County Wildlife Site level criteria (Cambridgeshire & Peterborough Panel, 2014) (Ref 8-48), but it is of higher than local importance due to the lack of this type of habitat within the DCO Site.
Grassland - Improved	51.1 ha	4.0	No	Below Local	A number of agricultural fields consisted of Perennial Ryegrass *Lolium perenne* dominated improved grasslands.
Grassland – Marshy / swamp	3.9 ha	0.3	LBAP, Habitat of Principal Importance	District	Due to its small size, it would not meet County Wildlife Site level criteria (Cambridgeshire & Peterborough Panel, 2014) (Ref 8-48), but it is of higher than local importance due to the lack of this type of habitat within the DCO Site.
Grassland - Poor semi-improved grassland	45.0 ha	3.5	No	Local	Not a habitat of principal importance

Habitat	Area (ha) / length (m)	% of Site area	Notable Habitat?	Biodiversity Importance	Rationale
Scrub - Dense	4.2 ha	0.3	No	Local	Not a habitat of principal importance
Scrub - Scattered	2.7 ha	0.2	No	Local	Not a habitat of principal importance
Coniferous Parkland	0.4 ha	<0.1	No	Local	Not a habitat of principal importance
Tall ruderal	7.0 ha	0.5	No	Local	Not a habitat of principal importance
Arable (including arable flora)	1008.2 ha	79.1	LBAP, Habitat of Principal Importance	Up to County	Arable field margins with rare/scarce arable flora species, including Corn Spurrey *Spergula arvensis* and Corn Marigold *Glebionis segetum* 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 *Anthemis arvensis* classified as Endangered in the UK and England, (Stroh *et al.* 2015 (Ref 8-27), Mcleod *et al.* 2017) (Ref 8-28). Arable flora present in field margins is considered as a receptor in Table 8-6.
Reedbed	0.1 ha	<0.1	Habitat of Principal Importance Reedbed	District	Sunnica East A – A drain in the north of this Site with a small area of S4 *Phragmites australis* swamp and reed-beds. Due to its small size, it would not meet County Wildlife Site level criteria (Cambridgeshire & Peterborough Panel, 2014) (Ref 8-48), but it is of higher than local importance due to the

Habitat	Area (ha) / length (m)	% of Site area	Notable Habitat?	Biodiversity Importance	Rationale
					lack of this type of habitat within the DCO Site.
Running water	582.2 ha	0.58	Including a network of ditches and rivers; Rivers are habitat of Principal Importance	County	River Snail, River Kennett and Lee Brook all within the DCO Site.
Standing water	2.0 ha	0.2	LBAP Habitat; Lakes and Ponds of certain criteria are Habitat of principal importance	Local	Ponds can be defined as permanent (or seasonal) waterbodies up to 2 ha in extent and qualify as being a priority habitat if they meet one or more criteria for UKBAP classification, including supporting species of high conservation importance. The majority of ponds within the DCO Site are either dry or have little to no macrophytes / aquatic vegetation and have little other ecological value. Furthermore, they are not stand-alone habitats within the wider area, as similar habitats can be found in the surrounding area. Therefore, the ponds within the DCO Site are considered to not reach the required levels to fulfil the criteria of a priority habitat and are considered as being of no more than local importance.
Ephemeral /short perennial	4.7 ha	0.4	No	Local	Not a habitat of principal importance
Bare ground	58.8 ha	4.6	No	Below Local	Not a habitat of principal importance

Habitat	*Area (ha) / length (m)*	*% of Site area*	*Notable Habitat?*	*Biodiversity Importance*	*Rationale*
Buildings	0.5 ha	<0.1	No	Below Local	Not a habitat of principal importance
Hard surface	11.8 ha	0.9	No	Below Local	Not a habitat of principal importance
Hedge - Defunct (species poor)	2,489 m	Not applicable (n/a)	Habitat of Principal Importance	County	Habitat of principal importance
Hedge - Intact (species poor)	19,135 m	n/a	LBAP, Habitat of Principal Importance	County	Habitat of principal importance
Hedge - with trees (species poor)	2,584 m	n/a	Habitat of Principal Importance	County	Habitat of principal importance
Fence	4,687 m	n/a	No	Below Local	Not a habitat of principal importance
Dry ditch	1,090 m	n/a	No	Local	Not a habitat of principal importance

Protected and Notable Species

8.6.8 The following protected or notable animal species (based on the criteria set out in Sections 8.4 of this chapter) have been identified during ecological surveys as present, or potentially present within the DCO Site and study areas presented in Section 8.4.4 of this chapter, and these are presented in Table 8-7.

8.6.9 The preliminary values (sensitivities) of the important ecological features within the study areas for each species have been identified and assessed as outlined in in Section 8.4 of this chapter. Table 8-7 includes summaries of protected and notable species identified in the study area and, along with rationale, details the preliminary biodiversity importance assigned to each species.

Table 8-7: Summary of Baseline Details for Legally Protected and Notable Species alongside Assessment of Biodiversity Importance of Ecological Features

Species or Species Group	*Scheme Area*	*Baseline Detail*	*Nature Conservation Receptor*	*Assessment of Biodiversity Importance*	*Rationale*
Arable Flora	**DCO Site (excluding Grid Connection Routes)**	Arable field margins with 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 8-27), Mcleod *et al* 2017) (Ref 8-28).	Sunnica East Site A – Three fields of local importance. Sunnica East Site B - Five fields of district importance and four of local importance. Sunnica West Site A - One field of county importance, one of district and four of local importance. Sunnica West Site B - One field of local importance.	Sunnica East Site A – Local Importance Sunnica East Site B – Up to District Importance Sunnica West Site A -Up to County Importance Sunnica West Site B – Local Importance	Based on standard assessment methodology, based on Byfield and Wilson (2005).

Other Flora	**DCO Site (excluding Grid Connection Routes)**	Sunnica East Site B - Three Nationally Scarce species present in dry acid grassland in these areas; Bearded Fescue, Sand Catchfly and Bur Medick and a NERC Act Section 41 species Annual Knawel.	Notable species present in lowland dry acid grassland priority habitat.	County	Species of principal importance within Section 41 of the NERC Act (2006).
Macrophytes	**DCO Site**	No macrophyte species of conservation importance were recorded, with the community sampled typical of nutrient rich waterbodies. Narrow-leaved Water plantain 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.	Aquatic macrophyte community in the watercourses across the DCO Site.	Local	No macrophyte species of conservation importance. A similar macrophyte assemblage is expected to be common in the wider landscape.
Aquatic macroinvertebrates	**DCO Site**	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; the diving beetle *Ilybius quadriguttatus*. None of these are Red Data Book species or species of conservation importance. The community composition across all the surveyed sites is considered to be of moderate conservation value under the CCI index. The invasive Signal Crayfish *Pacifastacus leniusculus* was recorded in the desk study of Lee Brook. The remains of this species	Aquatic macroinvertebrate communities in the watercourses across the DCO Site.	Local	Similar macroinvertebrate assemblages expected to be common across the wider landscape. There were no local BAP species recorded during any of the surveys.

		were also found in a ditch within the Sunnica East Site A.			
Terrestrial Invertebrates	**Sunnica East Site A**	Potential for notable species and assemblages to be present throughout the DCO Site, particularly in notable grassland habitats identified on Sunnica East Sites A and B.	Notable terrestrial invertebrate species and assemblages.	Up to County	Notable species and assemblages likely to be associated with priority habitats identified throughout the Scheme, particularly Sunnica East Sites A and B.
Fish	**DCO Site (excluding Grid Connection Routes)**	Sunnica West Site B - Records of protected fish species exist in the River Snail including Brook Lamprey *Lampetra planeri* and Bullhead *Cottus gobio*.	Fish population in River Snail	Regional	Brook Lamprey is an Annex II species under the Habitats Directive.
				County	Bullhead is an Annex II species under the Habitats Directive.
		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*.		Local Species Diversity is of county importance	Neither of these are rare, notable or protected fish species.
		Sunnica East Site A and B - Records of protected fish species exist in Lee Brook including Brook Lamprey, Bullhead, and Brown Trout *Salmo trutta*. These species may be present in the ditches onsite as they are connected to Lee Brook via River Lark.	Fish population in Lee Brook and ditches.	Regional	Brook Lamprey is an Annex II species under the Habitats Directive.
				County	Bullhead is an Annex II species under the Habitats Directive with widespread distribution.

			County	Brown Trout is a UK BAP priority species and a species of principal importance within Section 41 of the NERC Act (2006).
	The Lee brook fish community (excluding protected species) is composed of widespread common fish species including 3-spined stickleback, Dace *Leuciscus leuciscus*, 10-spined stickleback, Pike *Esox lucius*, Gudgeon *Gobio gobio*, Chub *Squalius cephalus* and Minnow *Phoxinus phoxinus*.		Local but species diversity is of county importance	None of the species recorded in Lee Brook are rare, notable or protected fish species.
Grid Connection Route	Desk study records exist of European Eel *Anguilla anguilla*, Bullhead and Spined Loach *Cobitis taenia* in Burwell Lode which is connected to Catchwater Drain. Desk study data indicate no fish were recorded in New River during an EA survey. No desk study or survey data exist for the ditches and ponds.	Fish population in Burwell Lode, Catchwater Drain, River Kennett, New River and in ditches and ponds	Regional	European Eel and Spined Loach are UK BAP priority species under the Habitats Directive and European Eel is a species of principal importance within Section 41 of the NERC Act (2006).
			County	Bullhead is an Annex II species under the Habitats Directive and wide spread in the area.

				Local but species diversity is of county importance	In the absence of desk study records, it is assumed the fish population is of local value. In the absence of desk study records, it is assumed the fish population is of local value.
Amphibians	**DCO Site**	No records of Great Crested Newt (GCN) were returned by the data search. Common Toad was recorded within 2 km of the Burwell National Grid Substation Extension. GCN is a qualifying species in the adjacent Fenland SAC (taken from the SAC citation)), which is hydrologically and ecologically connected to the Sunnica West Site B undertaken The suitability of all waterbodies for Great crested Newt was assessed by collecting specified data which were used to calculate a Habitat Suitability Index (HSI) for each waterbody. Water samples taken from those waterbodies which had been assessed as being suitable for GCN within 500m of the DCO Site were analysed for environmental DNA (eDNA) or surveys were undertaken to determine the presence or absence of these waterbodies. There was one positive eDNA result for GCN, approximately 250 m north of Sunnica East B.	Great Crested Newt presence just outside of the Sunnica East Site B boundary.	Local	Great Crested Newt is listed on Schedule 5 of the WCA, which affords them protection under Section 9, as amended by the Countryside Rights of Way Act (2000). They are also protected under Regulation 41 of the Conservation of Habitats and Species Regulations 2017. They are listed on Annex II and VI of the EC Habitats Directive, are included as Species of Principal Importance in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and are UK Biodiversity Action Plan Species. Positive eDNA result in a single

					waterbody, 250m north of Sunnica East Site B. Potential presence in terrestrial habitat of Sunnica West Site B, which is connected hydrologically to Fenland SAC, but waterbodies were all dry during they survey and no GCN recorded on Sunnica West Site B. No data search records of GCN within 2 km of the DCO Site and no GCN recorded in other Scheme areas so unlikely to be present elsewhere or within the ZoI.
Reptiles	**DCO Site**	Two species of reptile, Common Lizard *Zootoca vivipara* and Grass Snake, were recorded within the Sunnica West Site B boundary during field surveys. No reptiles recorded from suitable areas of habitat within Sunnica West Site A, Sunnica East Site A or Sunnica East Site B. There is no suitable habitat for reptiles within the Grid Connection Routes A1 or B1. The habitat within the Grid Connection Routes A2 and B2 was not surveyed for reptiles. However, the habitat within these areas was reviewed from Public Rights of Way (PRoW)s and aerial photography and evaluated for the potential for reptiles to occur using professional judgement. The	Common Lizard and Grass Snake present within Sunnica West Site B. Presumed Low population of Common Lizard, Grass Snake and Slow worm within Grid Connection Route B2.	Local	Protected from injury or killing within the WCA. Species of principal importance within Section 41 of the NERC Act (2006). Low population of two species confirmed within one DCO Site only.

		review concluded that Grid Connection Route B2 is likely to potentially support small populations of reptiles. The habitats within this area are a mixture of ditches, grassland and scrub and could be suitable for Grass Snake, Common Lizard and Slow worm *Anguis fragilis*. Adder *Vipera berus* is unlikely to occur in these areas, due to geographical range and the lack of woodland and bracken habitats, favoured by this species. Similar habitat occurs within the Burwell National Grid Substation Extension area, to that in Grid Connection Route B2, although the grassland around the existing substation is grazed grassland or unsuitable for reptiles. Whilst the majority of habitat in this area is unlikely to support Common Lizard and Slow-worm, Grass Snake could occur in low numbers within the ditches surrounding the existing substation			
Breeding Birds	**DCO Site**	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*) confirmed within the survey area.	An assemblage of notable birds breeding on the arable land within the survey area (DCO Site). Note – individually, the component sites of the DCO Site are only of Local value.	County	The arable land within the DCO Site supports a number of notable species during the breeding season, including Yellowhammer *Emberiza citrinella*, Linnet *Linaria cannabina*, Reed Bunting and Skylark *Alauda arvensis*; all are BoCC Red or Amber list species, listed as Priority bird species on the UKBAP or species of principal importance.

			Common nesting bird species throughout the DCO Site.	Site	All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended). Habitat present across the extent of the DCO Site supports nesting birds.
	Sunnica East Sites A and B		Stone-curlew	County	Specially protected species owing to inclusion on Annex 1 of the EU Birds Directive and Schedule 1 species on the WCA.
	Sunnica East Sites A and B; Sunnica West Site A		Quail, Hobby and Little Ringed Plover	County	Specially protected species owing to inclusion on Schedule 1 on the WCA
Non-breeding (wintering) birds	**DCO Site**	71 bird species recorded during the wintering bird surveys.	Assemblage of wintering birds	Species diversity for the whole Scheme is of county importance. Note – individually, the component sites of DCO Site are only of Local value.	No wintering bird population approaches the 1% level of the national population, which would constitute a nationally significant wintering bird population. Four species, listed on Annex I of the EC Birds Directive (2009) were recorded within the survey area: Little Egret *Egretta garzetta*, Red Kite *Milvus milvus*, Peregrine *Falco peregrinus* and

				Wintering population of Skylark is of district importance.	Golden Plover *Pluvialis apricaria*, with three species observed on a single occasion during surveys and Golden Plover recorded on several occasions. Fourteen Priority Species were recorded within the survey area. Sixteen species, included on the BoCC Red List and sixteen species, included on the BoCC Amber list, were recorded within the survey area. The remaining species are all included on the Green list and are of least conservation concern.
Bats	**DCO Site**	Sunnica East Site A - 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 noctula*, Leisler's bat *Nyctalus leisleri*, *Myotis* species, Brown Long-eared bat *Plecotus auritus*, Serotine *Eptesicus serotinus* and Barbastelle *Barbastella barbastellus*. A few barns with roosting potential and observed foraging activity along the watercourses and hedges. Sunnica East Site B - Very low to high bat activity (depending on the season and location) of at least 8 species; Common Pipistrelle, Soprano Pipistrelle, Noctule,	Foraging/commuting common and scarce/rarer bats present Foraging/commuting activity throughout with potential for roosts within and adjacent to the DCO Site. Precautionary principle of presumed presence of	Up to County (depending on species)	Biodiversity importance of foraging and commuting bats based on species rarity, numbers, presence of nearby roosts and type/complexity of community/foraging features. All potential roosts to be retained and not disturbed.

	Leisler's bat, *Myotis* species (including Daubenton's bat *Myotis daubentonii*, Brown long-eared bat, Serotine and Barbastelle. Highest activity over the reservoir to the south and along Badlingham Lane, but also foraging in fields particularly in the summer (*e.g.* over maize crops). Numerous potential roost features in mature trees. Sunnica West Site A - Very low to high bat activity (depending on the season and location within the site) 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 observed along tracks, field margins and adjacent to woodland. Numerous potential roost features in mature trees and farm buildings. Sunnica West Site B - 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. Highest number of bat passes on the static detector at this site along central hedge with 68 passes per hour in summer 2019. Numerous potential roost features in mature trees along central hedge, and in scattered mature trees in southern field. 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	roosting and foraging/commuting bats within the Grid Connection Routes A2 and B2, until further surveys undertaken.

		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 a roosts and foraging/commuting routes of value being present could not be ruled out.			
Badger	**DCO Site**	Four Badger 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 was not surveyed for Badger. 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.	At least three separate Badger social groups present within or in the vicinity of the DCO Site. Precautionary principle of presumed presence of Badger within the Grid Connection Routes A2 and B2, until further surveys undertaken.	Local	Badgers are legally protected under The Protection of Badgers Act 1992. Single clans of Badger in Sunnica East Site B (Suffolk), Sunnica West Site A (Cambridgeshire) and the proposed Burwell National Grid Substation Extension (Cambridgeshire).
Water Vole	**DCO Site**	Water Vole presence recorded in ditches within Sunnica West Site B DCO Site, within ditches in Grid Connection Route B2 (where access allowed) and in peripheral ditches of Sunnica East Site A and B.	Change or loss of peripheral habitat used by Water Vole. Precautionary principle of presumed presence of Water Vole in all ditches and rivers	District	Water Vole protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). A low population size recorded but in consideration of this species' declining status in a national and county context, the population of

			within the Grid Connection Routes A2 and B2, until further surveys undertaken		Water Vole is potentially of district importance.
Otter	**DCO Site**	Otter presence recorded in six peripheral watercourses. No Otter Holts recorded within the DCO Site.	Change or loss of peripheral habitat used by Otter. Precautionary principle of presumed presence of Otter in all ditches and rivers within the Grid Connection Routes A2 and B2, until further surveys undertaken	District	Otter protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Otter is also classified under the Habitats Directive (92/43/EEC) as a species requiring strict protection in Europe. In the UK this is enabled by The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018. Otter is also included in the following international legislation / conventions: • Appendix II and IV of the Habitats Directive, Appendix II of the Bern Convention and Appendix I of CITES; and

					• Globally threatened on the IUCN/WCMC Red Data List. A low population size recorded but in consideration of this species' declining status in a national and county context, the population of Otter is potentially of district importance.
Hedgehog *Erinaceus europaeus*	**DCO Site**	An assessment of the mix of scrub, hedgerow and grassland habitat present within the DCO Site and likelihood for Hedgehog to occur, concluded that Hedgehog is likely to be present within the DCO Site.	Assumed presence within DCO Site.	Local	Priority species in England. No surveys were undertaken for Hedgehog. However, following an incidental sighting of a Hedgehog during other ecological surveys and when considering the habitat quality within the DCO Site, an assumption has been made this species is likely to be present across the whole Scheme. Hedgehog is widespread and abundant in the UK and in Cambridgeshire and Suffolk.
Brown Hare *Lepus europaeus*	**DCO Site**	An assessment of the arable habitat within the DCO Site and likelihood for Brown Hare to occur, concluded that Brown Hare is likely to be present within the DCO Site.	Assumed presence within DCO Site.	Local	Priority and Local BAP species in Cambridgeshire and Suffolk. No surveys were

undertaken for Brown Hare. However, Brown Hare were recorded in arable land during other ecological surveys and when considering the habitat quality within the DCO SIte, an assumption has been made this species is likely to be present across the whole Scheme.

Brown Hare is widespread and abundant in the UK and in Cambridgeshire and Suffolk.

Future Baseline

8.6.10 This section considers those changes to the baseline conditions described above that might occur during the time period over which the Scheme will be in place. It considers changes that might occur in the absence of the Scheme being constructed.

8.6.11 The habitat within the DCO Site, up to 50m from the DCO Site Boundary, is largely arable farmland, cropped on rotation, bordered by hedgerows, scrub, woodland and connecting ditches. In the short to medium term, in absence of the Scheme, these habitats have and will continue to provide a number of species with potential habitat such as arable farmland for ground-nesting breeding birds and ditches for Water Vole. In the long term, in the absence of the Scheme, habitats on site will be under agricultural management and therefore the distribution of some species will change in response to cropping, whilst the assemblages may remain the same. Any changes to the baseline between now and the future scenario have been taken into account in the assessment and when determining mitigation measures.

Construction Period

8.6.12 If the Scheme did not proceed, the majority of existing habitats are likely to continue being present, although some changes in habitat extent, composition and structure will occur as a result of ecological succession *e.g.* the gradual establishment of tree and shrub seedlings. These resultant gradual changes in habitat composition are unlikely to materially alter the ecological baseline and therefore the habitats and species present are very unlikely to undergo significant change prior to the start of construction in 2022.

Opening and Operation

8.6.13 Based on available information, there are no reasons to expect that there would be any marked change in the habitats associated with the Scheme between opening in 2025 and 2065, if the Scheme did not progress. It is noted however, that changing climatic conditions resulting from climate change may influence the resilience of certain habitats and species. Habitats such as broad-leaved trees and scrub will be more mature but are likely to support a broadly similar species assemblage and arable farmland will also be managed accordingly, maintaining broadly similar species assemblages.

Decommissioning

8.6.14 The future baseline conditions at 2065 are likely to be similar to those at the start of construction in 2022, although habitats such as plantation woodland would have matured further. Species assemblages are also likely to have changed in accordance with the site conditions. Changes in biodiversity are likely to occur if climate change continues at its current pace. Adverse effects could include changes in species habitats and compositions and consequently changes in species assemblages and distribution. A Decommissioning Environmental Management Plan will be prepared prior to the decommissioning phase as outlined in Chapter 3: Scheme Description

Summary of Important Ecological Features

8.6.15 Table 8-8 summarises the important ecological features that are relevant to the Scheme, and to which specific part of the Scheme. Based on CIEEM guidelines (see section 8.4.22 of this chapter) and using professional judgement, features of local and site importance *i.e.* less than district importance, are not considered further in the assessment process, unless legislation requires their consideration.

Table 8-8: Summary of important ecological features

Important Ecological Feature	*Scheme Area*	*Reason for Valuation*	*Level of Biodiversity Value*
Seven sites of international importance (SPA, SAC or Ramsar)	DCO Site	Statutory site of nature conservation importance	International
Nine sites of national importance (SSSI, NNR)	DCO Site	Statutory site of nature conservation importance	National
31 sites of county importance (CWS, LNR, PRV or RNR)	DCO Site	Non-statutory site of nature conservation importance	County
Woodland - Broad-leaved semi-natural	DCO Site	LBAP Habitat; Lowland Mixed Deciduous Woodland – Habitat of Principal Importance	Up to District
Grassland - Unimproved Acid	Sunnica East Site B	Lowland dry acid grassland priority habitat and notable species that meets criteria for CWS selection in Suffolk.	County
Grassland - Semi-improved Acid grassland	DCO Site	LBAP, Habitat of Principal Importance. Due to its small size, it would not meet CWS level criteria	District
Grassland - Semi-improved calcareous	Sunnica East Site B	LBAP, Habitat of Principal Importance. Due to its small size, it would not meet CWS level criteria	District
Grassland – Marshy/swamp	Sunnica West Site B	LBAP, Habitat of Principal Importance. Due to its small size, it would not meet CWS level criteria	District
Reedbed	Sunnica East Site A	Habitat of Principal Importance. Due to its small	District

		size, it would not meet CWS level criteria	
Arable (including arable flora	DCO Site	Arable field margins with rare/scarce arable flora species.	Up to County
Running water	Sunnica East Site A; Grid Connection Route A2; Sunnica West Site B	River Snail, River Kennett and Lee Brook all within DCO Site.	County
Hedgerows	DCO Site	Between 20 and 25km length of hedgerows across the DCO Site	County
Arable Flora	Sunnica East Site B and Sunnica West Site A	Arable field margins with rare/scarce arable flora species.	County
Other Flora	Sunnica East Site B	Three Nationally Scarce species present in dry acid grassland	County
Terrestrial Invertebrates	Sunnica East Site A	Notable terrestrial invertebrate species and assemblages.	Up to County
Fish	Sunnica West Site B	Fish population in River Snail	Regional
		Bullhead, protected fish species, in River Snail	County
		Species diversity in River Snail	County
	Sunnica East Site A and B	Fish population in Lee Brook	Regional
		Bullhead and Brown Trout (protected fish species) in Lee Brook	County
		Species diversity in Lee Brook	County
	Grid Connection Route	European Eel and Spined Loach are UK BAP priority species under the Habitats Directive, in Burwell Lode.	Regional
		Bullhead (protected fish species) in Burwell Lode	County

		Species diversity in Burwell Lode	County
Breeding Birds	DCO Site	An assemblage of notable birds breeding on the arable land within the survey area.	County
	Sunnica East Sites A and B	Population of breeding Stone-curlew	County
	Sunnica East Sites A and B	Population of breeding Quail, Hobby and Little Ringed Plover	County
	Sunnica West Site A	Hobby	County
Wintering Birds	DCO Site	Population of wintering birds -species diversity	County
	DCO Site	Wintering population of Skylark	District
Bats	DCO Site	Foraging/ commuting common and scarce/rarer bat species, with potential for roosts within and adjacent the Scheme.	Up to County
Water Vole /Otter	DCO Site (more so in Sunnica West B)	Both species present along watercourses throughout the Scheme.	District

8.7 Embedded Design Mitigation

8.7.1 Primary mitigation measures are embedded within the Scheme, as illustrated within the Framework LEMP (see ***PEI Report Volume 2: Appendix 10I***) and Parameter Plans (see Figures 3-1 and 3-2). This preliminary embedded mitigation is needed to successfully integrate the Scheme within the context of the existing landscape and prevent or reduce any adverse effects on ecological features.

8.7.2 The following Scheme design, impact avoidance and embedded mitigation measures have been incorporated into the Scheme design, with detailed proposals and locations to be submitted with the DCO:

- 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 three 2 ha nesting plots for Stone-curlew, which will be created in advance of the Stone-curlew breeding season *i.e.* before March. Details of plot creation and management of nesting plots will follow

the RSPB information Note '*Managing nest plots for stone-curlews'* (Ref 8-48), with further requirements set out in the Countryside Stewardship Higher Tier '*AB5: Nesting plots for Stone-curlew*' guidance note.

- 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.
- The remaining land managed as biodiverse grassland, suitable for foraging Stone-curlew and breeding farmland birds, *e.g*. Lapwing and Skylark.

- 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 consider suitable water level management. Water is currently abstracted from the River Snail for agricultural irrigation during the summer and alternatives will be considered to help maintain higher water levels in this area. If found to be feasible for landowners, this will increase the biodiversity value of the Site and provide an extensive buffer of habitat between developable areas and Fenland SAC/Chippenham Fen Ramsar/SSSI and Snailwell Meadow SSSI.
  - Planting of seed-bearing species for overwintering farmland birds.
  - The remaining land managed as biodiverse grassland, suitable for breeding farmland birds, *e.g*. Lapwing and Skylark.
- 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.
- 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

[1] Breaking up the soil surface

management regime. Consideration will be paid to microclimatic conditions when considering appropriate species.

- Throughout the Scheme, undeveloped buffers of at least 5 m from existing boundary features have been embedded within the Scheme design.
- The Scheme has ensured that existing designated sites within the DCO Site are retained and measures embedded within the Scheme design ensure that they are not impacted during construction, *e.g.* through siting construction routes away from and outwith designated sites.
- The Scheme has ensured that existing woodland, treelines and the majority of hedgerows are retained and will be protected during construction of the Scheme.
- Extensive additional woodland and hedgerow planting throughout the Scheme is embedded within the Scheme design. See ***Chapter 10: Landscape and Visual Amenity*** and Figures 3-1 and 3-2 Parameter Plans for further details.
- Setback and screening of battery storage in Sunnica East Sites A and B and Sunnica West Site A from boundary features, in particular, areas of woodland.
- The design of the Scheme will 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, light spill or amelioration.
- The crossing 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, will 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 Framework CEMP will require that the perimeter security fence around the Scheme will be implemented early in the construction phase to secure the Site. This will also prevent construction activity in proximity to retained vegetation, in particularly designated sites within and adjacent the DCO Site and where required specific tree protection measures will be implemented, including fencing and construction exclusion zones.
- Throughout the Scheme, the use of motion detection security lighting to avoid permanent lighting will be utilised and a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill on to existing boundary features.
- The preparation and implementation of a Framework CEMP, secured through the DCO to manage the environmental effects of the Scheme and to demonstrate compliance with environmental legislation, which will then be implemented by the selected construction contractor and overseen by an Ecological Clerk of Works (ECoW), where required. This will include a Biosecurity Management Plan 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 will be undertaken within 10m of watercourses which is considered sufficient to mitigate for potential hazards such as chemical and soils spills into watercourses. New drainage systems on site will also mitigate for potential chemicals reaching watercourses during flood events.
- Where invasive non-native species have been identified, *e.g*. Lee Brook, no in-channel works will be undertaken to avoid the spread of invasive non-native species. These works will be monitored by an ECoW.
- Preparation of mitigation strategies for protected species and, where required, application 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.
- Vegetation clearance will be undertaken in advance of construction and at an appropriate time of year so as to avoid incidental injuring or killing of reptiles. There will be no need to undertake any translocation of reptiles.
- Avoidance of the nesting bird period *i.e.* March to August (inclusive) for vegetation clearance. Any vegetation clearance proposed within the nesting bird period will be checked for the presence of any nests by a suitably qualified ornithologist, prior to vegetation removal, and if active nests are found, then appropriate buffer zones would be put in place and the area monitored until the young birds have fledged.
- Reasonable avoidance measures along the cable corridors, including buffers of 30m around any identified Badger setts or trees with bat roost potential.
- Post-construction restoration of any habitat removed from within the Grid Connection cable corridor.
- Avoidance of construction traffic through designated sites.
- Retention and avoidance of ditches supporting Water Vole and Otter in the Sunnica West Site B and these ditches will be enhanced (where possible).
- Pre-commencement surveys for Stone-curlew will be undertaken in advance of the works commencing and secured through the CEMP.

8.8 Assessment of likely Impacts and Effects

8.8.1 This section describes the impacts and potential effects of the Scheme on relevant ecological features in the absence of any mitigation over and above that which is embedded in the design (as described above).

8.8.2 Relevant ecological features are those that are considered to be important and have the potential to be affected by the Scheme. An initial consideration of potential impacts and effects arising from the construction and operation phases of the Scheme is provided in Tables 8.9 to 8.10, to set the requirements for the more detailed impact assessment that follows.

8.8.3 It has been assumed that decommissioning impacts will be similar to those occurring during construction, with retention, where reasonably practicable, of important ecological features present at the time of decommissioning and any impacts mitigated fully in line with relevant legislative and policy requirements. It is anticipated that the existing protected species legislation would remain in place.

Statutory and Non-statutory designated Sites

8.8.4 The statutory and non-statutory designated sites that have been considered are included in Table 8.9 below.

Table 8-9: Determination of Relevant Ecological Features – Designated Sites

Ecological Feature	*Value*	*Potential impacts / effects*	*Taken forward for detailed Assessment?*
Chippenham Fen and Snailwell Poor's Fen, including Fenland SAC, Chippenham Fen Ramsar / NNR, Chippenham Fen and Snailwell Poor's Fen SSSI	International / National	**Construction**: This statutory designated site is directly adjacent to the north of the Sunnica West Site B and there are ecological and hydrological connections between the designated sites and the Sunnica West Site B. The construction of the Scheme will not directly impact on habitat within the Chippenham Fen and Snailwell Poor's Fen designated sites. During construction, there is potential for pollutant spills and surface runoff into watercourses hydrologically connected to the designated sites that have the potential to adversely affect habitats and species associated with the designated sites. Unmitigated, these indirect effects will adversely affect the integrity of the designated site. The impact, whilst short term during the period of construction, may result in medium term effects to important ecological features associated with the designated site. For example, the aquatic environment may take a number of years to recover from the results of a pollution spill during construction. However, as discussed above standard environmental protection measures will be implemented and adopted during construction, formalised through a CEMP, and these measures will include dust suppression and pollution prevention. Consequently, indirect effects to designated sites during construction will not occur and there will be no effect to the integrity of any statutory designated sites	No
		Operation: There are no pathways (*e.g.* habitat loss, disturbance to designated site features such as noise, lighting or visual), during operation of the Scheme which could affect these statutory designated sites.	No
Snailwell Meadows SSSI	National	**Construction**: This statutory designated site is directly adjacent to the south of the Sunnica West Site B and there are ecological and hydrological connections between the designated sites and the Sunnica West Site B.	No

		The construction of the Scheme will not directly impact on habitat within the Snailwell Meadows SSSI. During construction, there is potential for pollutant spills and surface runoff into watercourses hydrologically connected to the SSSI, which have the potential to adversely affect habitats and species associated with the SSSI. Unmitigated, these indirect effects will adversely affect the integrity of the SSSI. The impact, whilst short term during the period of construction, may result in medium term effects to important ecological features associated with the SSSI. For example, the aquatic environment may take a number of years to recover from the results of a pollution spill during construction. However, as discussed above, standard environmental protection measures will be implemented and adopted during construction, formalised through a CEMP, and these measures will include dust suppression and pollution prevention. Consequently, indirect effects to the SSSI during construction will not occur and there will be no effect to the integrity of the SSSI.	
		Operation: There are no pathways (*e.g.* habitat loss, disturbance to designated site features such as noise, lighting or visual) during operation of the Scheme which will affect this SSSI.	No
Brackland Rough SSSI	National	**Construction**: This statutory designated site is 157 m north of the Grid Connection Route B2 and approximately 350m north of the Sunnica West Site B and there are ecological and hydrological connections between the designated sites and the Sunnica West Site B. The construction of the Scheme will not directly impact on habitat within the Brackland Rough SSSI. During construction, there is potential for pollutant spills and surface runoff into watercourses hydrologically connected to the SSSI, which have the potential to adversely affect habitats and species associated with the SSSI. Unmitigated, these indirect effects will adversely affect the integrity of the SSSI. The impact, whilst short term during the period of construction, may result in medium term effects to important ecological features associated with the SSSI. For example, the aquatic environment may take a number of years to recover from the results of a pollution spill during construction. However, as discussed above, standard environmental protection measures will be implemented and adopted during construction, formalised through a CEMP, and these measures will include dust suppression and pollution prevention. Consequently,	No

		indirect effects to the SSSI during construction will not occur and there will be no effect to the integrity of the SSSI.	
		Operation: There are no pathways (*e.g.* habitat loss, disturbance to designated site features such as noise, lighting or visual) during operation of the Scheme which will affect this SSSI	No
Red Lodge Heath SSSI Cherry Hill and The Gallops, Barton Mills SSSI Newmarket Heath SSSI Devil's Dyke SSSI Breckland SPA Breckland Forest SSSI Wicken Fen Ramsar, Fenland SAC Wicken Fen SSSI, NNR (just outside 2km study area) Rex Graham Reserve SAC, SSSI Breckland SAC	International and National	**Construction**: These statutory designated sites are all 750m or more from the DCO Site and there are no ecological or hydrological connections between these designated sites and the Scheme. The construction of the Scheme will not directly impact on habitat within these designated sites. Preparation of the site and the construction of the Scheme will result in dust generation, along with noise and visual disturbance. Noise and visual disturbance will not impact on the integrity or the functioning of SAC, SPA, NNR or SSSI sites, owing to the distance between these sites and the DCO Site. Furthermore, the construction of the majority of the Scheme will be screened by existing vegetation and the topography. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, dust generation during construction will not affect the integrity of any statutory designated sites.	No

Devil's Dyke SAC			
		Operation: There are no pathways (*e.g.* habitat loss, disturbance to designated site features such as noise, lighting or visual), during operation of the Scheme which will affect these designated sites.	No
Havacre Meadows and Deal Nook CWS	County	**Construction**: This CWS is within the footprint of the Grid Connection Route A2. The construction of the Scheme for the Grid Connection will utilise boring, micro-tunnelling or moling methods and as such, will not directly impact habitats within the site, through loss of habitat. Preparation of the site and the construction of the Scheme will result in dust generation, along with noise and visual disturbance. Noise and visual disturbance will not impact on the integrity or the functioning of the CWS, which is designated for habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of the CWS.	No
		Operation: There are no pathways (*e.g.* habitat loss, disturbance to site features such as noise, lighting or visual), during operation of the Scheme which will affect this CWS.	No
Badlingham CWS	Lane County	**Construction**: This CWS is within the footprint of the Sunnica East Site B and will be retained as part of the Scheme design. The construction of the Scheme has ensured that construction traffic routes avoid designated sites and that security fencing will be established at an early stage to protect designated sites for incursion during construction. Preparation of the Site and the construction of the Scheme will result in dust generation, along with noise and visual disturbance. Noise and visual disturbance will not impact on the integrity or the functioning of the CWS, which is designated for habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution	No

				prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of the CWS.	
				Operation: There are no pathways (*e.g.* habitat loss, disturbance to site features such as noise, lighting or visual), during operation of the Scheme which will affect this CWS.	No
Worlington CWS	Heath	County		**Construction:** This CWS is within the footprint of the Sunnica East Site B and will be retained as part of the Scheme design. The construction of the Scheme has ensured that construction traffic routes avoid designated sites and that security fencing will be established at an early stage to protect designated sites for incursion during construction. Preparation of the Site and the construction of the Scheme will result in dust generation, along with noise and visual disturbance. Noise and visual disturbance will not impact on the integrity or the functioning of the CWS, which is designated for habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of the CWS.	No
				Operation: There are no pathways (*e.g.* habitat loss, disturbance to site features such as noise, lighting or visual), during operation of the Scheme which will affect this CWS.	No
Chippenham Pit	Gravel	County		**Construction:** This statutory designated site is adjacent to the Sunnica West Site A and there are ecological connections between the CWS and the Sunnica West Site A. The construction of the Scheme will not directly impact on habitat within the CWS. Preparation of the site and the construction of the Scheme will result in dust generation, along with noise and visual disturbance. Noise and visual disturbance will not impact on the integrity or the functioning of the CWS, which is designated for habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution	No

	prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of the CWS.	
	Operation: There are no pathways (*e.g.* habitat loss, disturbance to site features such as noise, lighting or visual), during operation of the Scheme which will affect this CWS.	No
Snailwell Grasslands County and Woods	**Construction:** These non-statutory designated sites are all outside the DCO Site. The construction of the Scheme will not directly impact on habitat within these designated sites and measures to ensure incursion during construction to designated sites within 50m with be put in place, e.g. security fencing early on in the construction process. Preparation of the Site and the construction of the Scheme will result in dust generation, along with noise and visual disturbance. Noise and visual disturbance will not impact on the integrity or the functioning of sites, owing to the distance between these sites and the DCO Site. Furthermore, the construction of the majority of the Scheme will be screened by existing vegetation and the topography. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, dust generation during construction will not affect the integrity of any statutory designated sites.	No
Halfmoon Plantation Pit Chippenham Avenue Fields Worlington Golf Course and Surrounding Habitat Chippenham Park	**Operation:** There are no pathways (*e.g.* habitat loss, disturbance to site features such as noise, lighting or visual), during operation of the Scheme which will affect these sites.	No

Joan's Meadow
Barton Mills Chalk Pit
The Limekilns and Adjacent Areas
Red Lodge Warren
Old Rectory Meadows
Worlington Chalk Pit
New River and Monk's Lode
Burwell Brick Pit
Snailwell (S of the study to the railway)
Spring Close
Criteria 1 - Cherry Hill & the Gallops RNR
Kennett Churchyard
Norah Hanbury-Kelk Memorial Meadows
Chippenham

Freckenham Road RSV
Pauline's Swamp
Isleham
Barton Mills
Mildenhall Woods
Burwell Disused Railway
Barton Mills Meadows
RNR 96

Habitats and Species

8.8.5 The relevant ecological features that have been considered are included in Table 8.10 below.

Table 8-10: Determination of relevant ecological features - habitats and species

Ecological feature	*Value*	*Potential impacts / effects*	*Taken forward for Detailed Assessment?*
Woodland - Broad-leaved semi-natural	Up to District	**Construction:** All woodland present within the DCO Site will be retained and measures embedded within the Scheme design to protect retained habitats during construction, such as that security fencing will be established at an early stage to protect retained habitats from incursion during construction. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact woodland habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of the retained woodland..	No
		Operation: There are no pathways (e.g. habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect retained habitats.	No
Grassland - Unimproved Acid and Semi-improved Acid	County and District	**Construction:** Construction activities will result in the direct loss of unimproved acid grassland. Although, land has been embedded within the Scheme for creation of dry acid grassland, this will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. However, significant areas of dry acid grassland will be retained and their quality improved (through positive management), which will mitigate in the short-term for the loss of other areas of acid grassland and whilst mitigation areas develop. All retained acid grassland present within the DCO Site will be protected during construction, through measures such as that security fencing will be established at an early stage to protect retained grassland habitats from incursion during construction.	Yes

		During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact grassland habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained grassland habitats.	
		Operation: There are no pathways (e.g. habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect acid grassland.	No
Grassland - Semi-improved calcareous	District	**Construction:** Construction activities will result in the direct loss of semi-improved calcareous grassland. Although, land has been embedded within the Scheme for creation of grassland, including calcareous, this will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact grassland habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained grassland habitats.	Yes
		Operation: There are no pathways (e.g. habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect calcareous grassland.	No
Grassland – Marshy/swamp	District	**Construction:** Construction activities will result in the direct loss of marshy grassland. Although, land has been embedded within the Scheme for creation of replacement grassland, including marshy/swamp, this will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. All retained marshy grassland present within the DCO Site will be protected during construction, through measures such as that security fencing will be established at an early stage to protect retained habitats from incursion during construction.	Yes

		Preparation of the site and the construction of the Scheme will result in dust generation. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained grassland habitats.	
		Operation:	No
		There are no pathways (e.g. habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect marshy grassland.	
Reedbed	District	**Construction:**	No
		All reedbed present within the DCO Site will be retained and measures embedded within the Scheme design to protect retained habitats during construction, such as that security fencing will be established at an early stage to protect retained habitats from incursion during construction. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact reedbed habitats. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained reedbed habitats,.	
		Operation:	No
		There are no pathways (e.g. habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect reedbed.	
Arable Flora	Up to County	**Construction:**	Yes
		Construction activities will result in the direct loss of arable farmland and associated flora. Although, land has been embedded within the Scheme for creation of replacement arable flora habitat, this may take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. However, construction activities in some areas may have a short-term temporary beneficial effect by creating conditions suitable for arable plants. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact arable flora. The implementation of standard environmental protection measures during construction,	

		such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained arable flora.	
		Operation: There are no pathways (*e.g.* habitat loss and pollution) during operation of the Scheme which could affect arable flora. A suitable management programme will be embedded in the Scheme's LEMP to ensure that conditions suitable for arable plants are maintained during operation.	No
Hedgerows	County	**Construction:** Whilst the embedded mitigation includes the retention and avoidance of the majority of hedgerows, there will be a loss of small sections of recently planted hedgerow during construction, to facilitate access routes. These habitats will be restored, post-construction, but there is likely to be a temporary (short-term) adverse effect on this habitat type.	Yes
		Operation: There are no pathways (*e.g.* habitat loss and pollution) during operation of the Scheme which could affect hedgerows.	No
Other Flora	County	**Construction:** Construction activities will result in the direct loss of unimproved acid grassland and associated notable flora. Although, land has been embedded within the Scheme for creation of replacement dry acid grassland this will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. However, significant areas of dry acid grassland will be retained and their quality improved (through positive management and embedded in the Scheme's LEMP), which will mitigate in the short-term for the loss of other areas of acid grassland and whilst mitigation areas develop. All retained acid grassland and associated notable flora present within the DCO Site will be protected during construction, through measures such as that security fencing will be established at an early stage to protect retained habitats from incursion during construction. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact other flora. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained flora habitats.	Yes

		Operation: There are no pathways (*e.g.* habitat loss and pollution), during operation of the Scheme which could affect arable flora. A suitable management programme will be embedded in the Scheme's LEMP to ensure that conditions suitable for arable plants are maintained during operation.	No
Aquatic Macrophytes	County	**Construction:** All watercourses present within the DCO Site will be retained and measures embedded within the Scheme design to protect retained habitats during construction, such as that security fencing will be established at an early stage to protect retained habitats from incursion during construction. Where cable needs to be laid throughout the Scheme and this passes through a watercourse, boring, micro-tunnelling or moling methods will be utilised to avoid direct impacts. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact aquatic macrophytes. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained habitats supporting aquatic macrophytes..	No
		Operation: There are no pathways (e.g. habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect aquatic macrophytes.	No
Aquatic Macroinvertebrates	District	**Construction:** All watercourses present within the DCO Site will be retained and measures embedded within the Scheme design to protect retained habitats during construction, such as, security fencing will be established at an early stage to protect retained habitats from incursion during construction. Where cable needs to be laid throughout the Scheme and this passes through a watercourse, boring, micro-tunnelling or moling methods will be utilised to avoid direct impacts. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact water quality and in turn, aquatic macroinvertebrates.. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted	No

		and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of water quality supporting aquatic macroinvertebrates.	
		Operation: There are no pathways (e.g. habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect aquatic macroinvertebrates.	No
Terrestrial Invertebrates	Up to County	**Construction:** Construction activities will likely result in the direct loss of habitats used by notable terrestrial invertebrate species and assemblages. Although, land has been embedded within the Scheme for creation of replacement habitats suitable for these species and assemblages these will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on some species. However, significant areas of habitat will be retained and their quality improved (through positive management and reinforced planting), which will mitigate in the short-term for the loss of other habitats and whilst mitigation areas develop. All retained habitats present within the DCO Site will be protected during construction, and, security fencing will be installed at an early stage to protect retained habitats from incursion during construction. During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact habitats supporting terrestrial invertebrates.. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect the integrity of retained habitats supporting terrestrial invertebrates,.	Yes
		Operation: There are no pathways (*e.g.* habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect terrestrial invertebrates.	No
Fish	Regional to County	**Construction:** All watercourses present within the DCO Site will be retained and measures embedded within the Scheme design to protect retained habitats during construction, such as, security fencing will be established at an early stage to protect retained habitats from incursion during construction. Where cable needs to be laid throughout the Scheme and this passes through a main watercourse, boring, micro-tunnelling or moling methods will be utilised to avoid direct impacts.	No

		During construction, there is the potential that preparation of the Site and construction of the Scheme will result in dust and other pollutants (such as emissions from construction vehicles and oil-spills) which may impact water quality and in turn, fish. The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted and these measures will be formalised into a CEMP. Consequently, pollution during construction will not affect water quality and therefore, fish.	
		Operation: There are no pathways (*e.g.* habitat loss, disturbance of habitats and pollution), during operation of the Scheme which could affect fish.	No
Breeding Bird Assemblage – DCO Site	County	**Construction**: The amount of permanent habitat loss has been minimised as far as reasonably practicable, with hedgerows and woodland areas retained, which will not affect the majority of breeding bird species. The loss of any arable habitat, which in turn will lead to the displacement of ground-nesting breeding bird species reliant on this habitat, such as Skylark, will require replacement habitat. The construction of the Scheme, if undertaken within the bird breeding season (March to August inclusive) has the potential to cause disturbance to breeding birds in retained habitats. Nesting bird checks may need to be undertaken by an ornithologist prior to construction near to retained habitats to ensure there is no disturbance. Best practice construction methods as detailed in the CEMP will include implementation of measures to minimise noise, lighting and vibration disturbance to breeding birds.	Yes
		Operation: There are no pathways (*e.g.* habitat loss, disturbance to breeding birds such as noise, lighting or visual), during operation of the Scheme which could affect breeding birds.	No
Population of breeding Stone-curlew on Sunnica East Sites A and B	County	**Construction**: The construction of the Scheme will result in habitat loss for breeding Stone-curlew within the Sunnica East Site B DCO Site. Embedded mitigation has been provided for nesting Stone-curlew to mitigate for the permanent loss of habitat. There is the potential for temporary displacement during construction. There is the potential for visual and noise disturbance to arise during construction on breeding Stone-curlew. Construction noise predictions are provided in ***Chapter 11: Noise and Vibration, Figure 11-2.***	Yes

		Operation: There are no pathways arising from habitat loss, which could affect breeding Stone-curlew during operation of the Scheme. Maintenance visits have the potential to disturb nesting Stone-curlew.	Yes
Population of breeding Quail, Hobby and Little Ringed Plover on Sunnica East Sites A and B	County	**Construction**: The construction of the Scheme will result in habitat loss for Quail and Little Ringed Plover. If construction is undertaken within the bird breeding season (March to August inclusive) there is also the potential for disturbance to affect breeding Quail, Hobby and Little Ringed Plover within the DCO Site.	Yes
		Operation: There are no pathways arising from habitat loss, which could affect breeding Quail or Little Ringed Plover during operation of the Scheme. It is unlikely that maintenance visits would result in disturbance to these species, given their breeding ecology and location of nesting sites.	No
Population of breeding Hobby on Sunnica West Site A	County	**Construction**: The construction of the Scheme, if undertaken within the bird breeding season (March to August inclusive), has the potential to affect breeding Hobby within the Sunnica West Site A DCO Site. There will be no loss of habitat used by breeding Hobby during construction of the Scheme.	Yes
		Operation: There are no pathways (*e.g.* habitat loss, disturbance from noise, lighting or visual) which could affect breeding Hobby during operation of the Scheme. It is unlikely that low frequency of maintenance visits would result it disturbance to these species, given their breeding ecology.	No
Wintering bird assemblage – DCO Site	County	**Construction**: The amount of permanent habitat loss has been minimised as far as reasonably practicable, with hedgerows and woodland areas retained, meaning the majority of wintering bird species will not be affected. The loss of any arable habitat, which in turn will lead to the displacement of wintering bird species reliant on this habitat, will be avoided as much as practicable and mitigated through the retention of existing grassland/cover crops and undeveloped mitigation areas. Best practice construction methods as detailed in the CEMP and will include implementation of measures to minimise noise, lighting and vibration disturbance to wintering birds.	No

		Operation: There are no pathways (*e.g.* habitat loss, disturbance to breeding birds such as noise, lighting or visual), during operation of the Scheme which could affect wintering birds.	No
Wintering population of Skylark -Whole Scheme	District	**Construction**: The loss of arable habitat, which in turn will lead to the displacement of wintering Skylark reliant on this habitat, will be avoided and mitigated through the retention of existing grassland/cover crops and undeveloped mitigation areas. Good industry practice construction methods as detailed in the CEMP and will include implementation of measures to minimise noise, lighting and vibration disturbance to wintering birds.	No
		Operation: There are no pathways (*e.g.* habitat loss, disturbance to breeding birds such as noise, lighting or visual), during operation of the Scheme which could affect wintering Skylark.	No
Bats	Up to County, depending on species	**Construction:** The construction of the Scheme will avoid features used by roosting and foraging/commuting bats. There will be no loss of important habitats used by bats anywhere within the DCO Site. During construction, there is potential for disturbance and light pollution which could adversely affect habitats used by bats. However, standard environmental protection measures will be implemented and adopted during construction, formalised through a CEMP, and these measures will include dust suppression, pollution prevention, screening of important habitats and measures to control light spill. Consequently, indirect effects to habitats supporting bats during construction will be avoided.	No
		Operation: There are no pathways (e.g. habitat loss, disturbance, such as noise, lighting or visual), during operation of the Scheme which could affect bats.	No
Water Vole	District	**Construction**: The construction of the Scheme will avoid ditches and watercourses in Sunnica West Site B where Water Vole were recorded and these will be retained and enhanced (where possible). There will be no loss of habitat	No

		used by Water Vole anywhere within the DCO Site. The construction of the Scheme will be offset from any peripheral watercourses, used by Water Vole, as detailed in the embedded design mitigation. The construction of the Grid Connection will utilise boring, micro-tunnelling or moling methods to cross watercourses and will therefore avoid habitat loss and direct mortality for this species. During construction, there is potential for pollutant spills and surface runoff into watercourses which could adversely affect habitats and species. However, standard environmental protection measures will be implemented and adopted during construction, formalised through a CEMP, and these measures will include dust suppression and pollution prevention. Consequently, indirect effects to watercourses supporting Water Vole during construction will not occur, providing the environmental protection measures are implemented.	
		Operation: There are no pathways (*e.g.* habitat loss, disturbance from noise, lighting or visual) which could affect Water Vole during operation of the Scheme.	No
Otter	District	**Construction**: The construction of the Scheme will avoid watercourses where Otter were recorded and these will be retained and enhanced (where possible). There will be no loss of habitat used by Otter anywhere within the DCO Site. The construction of the Scheme will be offset from any peripheral watercourses, used by Otter, as detailed in the embedded design mitigation. The construction of the Grid Connection will utilise boring, micro-tunnelling or moling methods to cross watercourses and will therefore avoid habitat loss and direct mortality for this species. During construction, there is potential for pollutant spills and surface runoff into watercourses which could adversely affect habitats and species. However, standard environmental protection measures will be implemented and adopted during construction, formalised through a CEMP, and these measures will include dust suppression and pollution prevention. Consequently, indirect effects to watercourses supporting Otter during construction will not occur, providing the environmental protection measures are implemented.	No
		Operation: There are no pathways (*e.g.* habitat loss, disturbance from noise, lighting or visual) which could affect Otter during operation of the Scheme.	No

8.9 Significance of Effects

8.9.1 Taking into account the committed avoidance and mitigation measures as detailed in section 8.7 of this chapter, the potential for the Scheme to generate effects on important ecological features was evaluated using the methodology as detailed in section 8.4 of this chapter. The aim of the evaluation was to identify potentially significant effects and determine the need for bespoke mitigation measures additional to those detailed in section 8.7 of this chapter. Calculations to demonstrate habitat gains will be provided in the ES.

8.9.2 Accordingly, the evaluation has identified the following impacts on important ecological features that have been taken forward for further preliminary assessment.

Construction

- Direct loss of unimproved (and semi-improved) acid grassland in Sunnica East Site B;
- Direct loss of semi-improved calcareous grassland in Sunnica East Site B;
- Direct loss of marshy grassland in Sunnica West Site B;
- Direct loss of arable habitat supporting notable arable flora in Sunnica East Site B and Sunnica West A;
- Direct loss of hedgerows across the Scheme, to facilitate access;
- Direct loss of habitat supporting notable terrestrial invertebrate species and assemblages in Sunnica East Site B;
- Temporary loss of habitat on the breeding bird assemblage across the Scheme;
- Temporary loss of habitat for breeding Stone-curlew in Sunnica East Site A and Site B;
- Disturbance to breeding Stone-curlew in Sunnica East Site A and Site B;
- Temporary loss of habitat for breeding Quail and Little Ringed Plover on Sunnica East Sites A and B;
- Disturbance to breeding Hobby in Sunnica West Site A; and,
- Disturbance to breeding Quail, Little Ringed Plover and Hobby on Sunnica East Sites A and B.

Operation

- Disturbance to breeding Stone-curlew in Sunnica East Sites A and B.

Decommissioning

- Impacts are predicted to be similar to those assessed for the construction phase.

8.9.3 Taking account of embedded mitigation, no impacts are predicted on important ecological features associated with the Grid Connection Route A, Grid Connection Route B, and Burwell National Grid Substation Extension.

Construction

Sunnica East Site A and Site B

Direct loss of unimproved (and semi-improved) acid grassland in Sunnica East Site B

8.9.4 Construction activities are predicted to result in the direct loss of unimproved (and semi-improved) acid grassland. Although, land has been embedded within the Scheme design for creation of dry acid grassland this will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. However, significant areas of dry acid grassland will be retained and protected during construction with their quality improved (through positive management), which will help mitigate in the short-term for the loss of other areas of acid grassland and whilst mitigation areas develop. Once established it is predicted that the Scheme will be able to deliver a net gain in this habitat and the overall impact will be beneficial.

8.9.5 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of areas of unimproved (and semi-improved) acid grassland, this impact has been assessed as temporary low adverse, which results in a temporary **minor adverse** effect, that is not considered significant.

Direct loss of semi-improved calcareous grassland in Sunnica East Site B

8.9.6 As with acid grassland, construction activities are predicted to result in the direct loss of semi-improved calcareous grassland. Although, land has been embedded within the Scheme design for creation of calcareous grassland this will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. However, the area to be lost is small and possibly on the margins of construction. Where reasonably practicable this habitat will be retained and protected during construction with its quality improved (through positive management). Once new habitats are established it is predicted that the Scheme will be able to deliver a net gain in this habitat and the overall impact will be beneficial. This will be demonstrated in the ES.

8.9.7 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of areas of semi-improved calcareous grassland, this impact has been assessed as temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Direct loss of arable habitat supporting notable arable flora in Sunnica East Site B

8.9.8 As with grassland habitats, construction activities are predicted to result in the direct loss of arable habitats, particularly field margins, supporting notable arable flora. Although, land has been embedded within the Scheme for creation of habitats for arable flora this may take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type in some areas. However, it is possible that construction activities will create ground disturbance that may benefit arable flora during the construction in certain areas, *i.e.* disturbance of the soil and clearance of arable crops may encourage arable plant species present in the seedbank to

colonise. This will help mitigate the temporary loss of some areas for arable plants. Once new habitats areas establish, and positive management is in place, it is expected that the Scheme will be able to deliver a net gain in this habitat and the overall impact will be beneficial.

8.9.9 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of areas of arable habitats, plus the potential for construction activities to create disturbed ground conditions beneficial to arable flora, it is assessed that this impact will be temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Direct loss of habitat supporting notable terrestrial invertebrate species and assemblages in Sunnica East Site B

8.9.10 It is likely that notable terrestrial invertebrate species and assemblages will be associated with the grassland habitats identified above. As with sensitive grassland habitats, the Scheme will look to retain key areas for terrestrial invertebrates. However, construction activities are predicted to result in the direct loss of habitats supporting notable terrestrial invertebrates. Although, land has been embedded within the Scheme for creation of biodiverse habitats these will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on associated invertebrate species. However, significant areas of grassland habitats will be retained and protected during construction with their quality improved (through positive management), which will help mitigate in the short-term for the loss of other areas and whilst mitigation areas develop. Once established it is anticipated that the Scheme will be able to deliver a net gain in this habitat required to support a range of terrestrial invertebrate species and assemblages and the overall impact will be beneficial.

8.9.11 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of grassland habitats supporting notable terrestrial invertebrate species and assemblages, this impact has been assessed as temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Temporary loss of habitat for breeding Stone-curlew in Sunnica East Site A and Site B

8.9.12 Construction activities are predicted to result in the direct loss of habitats supporting breeding Stone-curlew. Land has been embedded within the Scheme design for creation of Stone-curlew breeding habitat, including the retention of an existing successful breeding site. Alternative nesting sites will be secured and prepared in advance of the Stone-curlew breeding season, so that appropriate mitigation is in place during construction. These areas will be retained and managed throughout the lifespan of the project, pursuant to the LEMP.

8.9.13 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of habitats for breeding Stone-curlew, this impact has been assessed as temporary low adverse, which results in a temporary **minor adverse** effect, that is not considered significant.

Disturbance to breeding Stone-curlew in Sunnica East Site A and Site B

8.9.14 Construction activities have the potential to disturb Stone-curlew, a sensitive breeding species listed on Schedule 1 of the WCA. Pre-commencement surveys for Stone-curlew will be undertaken in advance of the works commencing and through the CEMP, suitable measures will be delivered to ensure disturbance to Stone-curlew is avoided in line with the relevant legislation. Alternative nesting sites will also be delivered in advance of the Stone-curlew breeding season, as discussed above. These alternative breeding sites will be protected from noise and visual disturbance during construction. Construction noise predictions are provided in ***Chapter 11: Noise and Vibration, Figure 11-2.***

8.9.15 Taking into account embedded protection measures delivered through the CEMP, alternative breeding locations and Scheme design to minimise the impact of construction activities causing disturbance to habitats used by breeding Stone-curlew, this impact has been assessed as temporary low adverse, which results in a temporary **minor adverse** effect, that is not considered significant.

Temporary loss of habitat for breeding Quail and Little Ringed Plover on Sunnica East Sites A and B

8.9.16 As with grassland habitats the Scheme will embed key areas for Quail and Little Ringed Plover across the Sunnica East Sites A and B, both within existing grassland areas and other retained areas. However, construction activities are predicted to result in the direct loss of habitats supporting both Quail and Little Ringed Plover. Although, land has been embedded within the Scheme for creation of biodiverse habitats these will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on breeding Quail and Little Ringed Plover. However, as significant areas of grassland habitats will be retained and protected during construction, with their quality improved (through positive management), which will help mitigate in the short-term for the loss of other areas and whilst mitigation areas develop. It is important that these habitats are established early on during the construction programme and in advance of the breeding season (*i.e.* before March) to ensure that any loss of habitat is mitigated and available. Once established it is predicted that the Scheme will be able to deliver a net gain in habitats required to support Quail and Little Ringed Plover and the overall impact will be beneficial.

8.9.17 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of habitats supporting Quail and Little Ringed Plover, this impact has been assessed as temporary low adverse, which results in a temporary **minor adverse** effect, that is not considered significant.

Disturbance to breeding Quail, Little Ringed Plover and Hobby on Sunnica East Sites A and B.

8.9.18 Construction activities have the potential to disturb Quail, Little Ringed Plover and Hobby, all sensitive breeding species listed on Schedule 1 of the WCA. Pre-commencement surveys for sensitive breeding birds, i.e. those listed on Schedule 1 of the WCA, will be undertaken in advance of the works commencing and through the CEMP, suitable measures will be delivered to

ensure disturbance to sensitive breeding birds is avoided in line with the relevant legislation. There is likely to be a temporary (short-term) adverse effect from disturbance on breeding Quail, Little Ringed Plover and Hobby, if construction is undertaken during the bird breeding season (March to August inclusive). However, through appropriate monitoring and management during construction, impacts will be avoided, in line with legislative requirements.

8.9.19 Taking into account embedded protection measures and delivery of a robust CEMP, the impact of construction activities causing disturbance to Quail, Little Ringed Plover and Hobby, this impact has been assessed as temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Summary of Magnitude of Impact and Significance of Effect for Sunnica East Site

8.9.20 Table 8-11 summarises the sensitivity (value) of important ecological features, impacts and effects resulting from construction for Sunnica East Site.

Table 8-11: Summary of Magnitude of Impact and Significance of Effect for Sunnica East Site

Receptor	*Sensitivity (Value)*	*Description of Impact*	*Magnitude of Impact*	*Effect Category*	*Significant effect (Yes / No)*
Grassland - unimproved (and semi-improved) acid	Medium (county)	Loss of Habitat	Low adverse	Minor adverse	No
Grassland - semi-improved calcareous	Low (district)	Loss of Habitat	Low adverse	Negligible	No
Arable flora	Medium (county)	Loss of Habitat	Low adverse	Negligible	No
Terrestrial invertebrate species and assemblages	Medium (county)	Loss of Habitat	Low adverse	Minor adverse	No
Stone-curlew	Medium (county)	Loss of Habitat Disturbance and displacement when breeding.	Low adverse	Minor adverse	No
Quail, Little Ringed Plover and Hobby	Medium (county)	Loss of Habitat	Low adverse	Minor adverse	No

	Disturbance and displacement when breeding.	Negligible

Sunnica West Sites A and B

Direct loss of marshy grassland in Sunnica West Site B

8.9.21 Construction activities are predicted to result in the direct loss of marshy grassland. Although, land has been embedded within the Scheme for creation of marshy grassland this will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type. However, the area to be lost is small and possibly on the margins of construction. Where reasonably practicable this habitat will be retained and protected during construction with its quality improved (through positive management). Once new habitats area established it is predicted that the Scheme will be able to deliver a net gain in this habitat and the overall impact will be beneficial.

8.9.22 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of areas of marshy grassland, this impact has been assessed as temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Direct loss of arable habitat supporting notable arable flora in Sunnica West Site A

8.9.23 Construction activities are predicted to result in the direct loss of arable habitats, particularly field margins, supporting notable arable flora. Although, land has been embedded within the Scheme for creation of habitats for arable flora this may take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type in some areas. However, it is possible that construction activities will create ground disturbance that may benefit arable flora during the construction in certain areas, *i.e*. disturbance of the soil and clearance of arable crops may encourage arable plant species present in the seedbank to colonise. This will help mitigate the temporary loss of some areas for arable plants. Once new habitats areas establish, and positive management is in place, it is predicted that the Scheme will be able to deliver a net gain in this habitat and the overall impact will be beneficial.

8.9.24 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of areas of arable habitats, plus the potential for construction activities to create disturbed ground conditions beneficial to arable flora, it is assessed that this impact will be temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Disturbance to breeding Hobby on Sunnica West Site A.

8.9.25 As with construction-related disturbance on Sunnica East Sites A and B, construction activities on the Sunnica West Site A have the potential to disturb

Hobby, a sensitive breeding species listed on Schedule 1 of the WCA. Pre-commencement surveys for sensitive breeding birds, *i.e*. those listed on Schedule 1 of the WCA, will be undertaken in advance of the works commencing and through the CEMP, suitable measures will be delivered to ensure disturbance to sensitive breeding birds is avoided in line with the relevant legislation. There is likely to be a temporary (short-term) adverse effect from disturbance on breeding Hobby, if construction is undertaken during the Hobby breeding season (March to August, inclusive). However, through appropriate monitoring and management during construction impacts will be avoided, in line with legislative requirements.

8.9.26 Taking into account embedded protection measures and delivery of a robust CEMP, the impact of construction activities causing disturbance to Hobby, this impact has been assessed as temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Summary of Magnitude of Impact and Significance of Effect for Sunnica West Site

8.9.27 Table 8-12 summarises the sensitivity (value) of important ecological features, impacts and effects resulting from construction for Sunnica West Site.

Table 8-12: Summary of Magnitude of Impact and Significance of Effect for Sunnica West Site

Receptor	*Sensitivity (Value)*	*Description of Impact*	*Magnitude of Impact*	*Effect Category*	*Significant effect (Yes / No)*
Grassland - Marshy	Medium (county)	Loss of Habitat	Low adverse	Negligible	No
Arable flora	Medium (county)	Loss of Habitat	Low adverse	Negligible	No
Hobby	Medium (county)	Disturbance and displacement when breeding.	Low adverse	Negligible	No

DCO Site (excluding cable route and Burwell Substation)

Direct loss of hedgerows across the Scheme to facilitate access

8.9.28 As with grassland habitats, construction activities are predicted to result in the direct loss of small sections of hedgerow and recently planted hedgerow, i.e. <4 years old. Although, the majority of hedgerows across the Scheme will be avoided and replanting has been embedded within the Scheme design for creation of hedgerows, this may take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on this habitat type in some areas. Once hedgerows establish, it is predicted that the Scheme will be able to deliver a net gain in this habitat and the overall impact will be beneficial.

8.9.29 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of areas of hedgerows, it is assed that this impact will be temporary low adverse, which results in a temporary **negligible** effect, that is not considered significant.

Temporary loss of habitat on the breeding bird assemblage across the Scheme

8.9.30 As with sensitive grassland habitats the Scheme will look to retain key areas for breeding birds across the DCO Site both within existing grassland areas, but also by ensuring the majority of boundary features (hedgerows, trees and woodland) are retained and protected during construction. However, construction activities are predicted to result in the direct loss of arable habitats supporting notable breeding bird assemblages. Although, land has been embedded within the Scheme design for creation of biodiverse habitats these will take time to develop and therefore, there is likely to be a temporary (short-term) adverse effect on the breeding bird assemblage particularly those species associated with arable farmland. However, as significant areas of grassland habitats, along with boundary features (hedgerows, trees and woodland), will be retained and protected during construction with their quality improved (through positive management), which will help mitigate in the short-term for the loss of other areas and whilst mitigation areas develop. Once established it is predicted that the Scheme will be able to deliver a net gain in habitats required to support a diverse breeding assemblage similar to that currently present, but at an increased population size and the overall impact will be beneficial.

8.9.31 Taking into account embedded protection measures and Scheme design to minimise the impact of construction activities causing direct loss of habitats supporting a notable breeding bird assemblage, this impact has been assessed as temporary low adverse, which results in a temporary **minor adverse** effect, that is not considered significant.

Summary of Magnitude of Impact and Significance of Effect for DCO Site wide Receptors

8.9.32 Table 8-13 summarises the sensitivity (value) of important ecological features, impacts and effects resulting from construction for Scheme wide receptors.

Table 8-13: Summary of Magnitude of Impact and Significance of Effect for DCO Site wide receptors

Receptor	*Sensitivity (Value)*	*Description of Impact*	*Magnitude of Impact*	*Effect Category*	*Significant effect (Yes / No)*
Hedgerows	Medium (county)	Loss of Habitat	Low adverse	Negligible	No
Breeding Bird assemblage	Medium (county)	Loss of Habitat	Low adverse	Minor adverse	No

Operation (2025)

Sunnica East Site

Disturbance to breeding Stone-curlew in Sunnica East Sites A and B

8.9.33 Ongoing maintenance activities throughout the lifespan of the Scheme have the potential to disturb Stone-curlew, a sensitive breeding species listed on Schedule 1 of the WCA. Embedded mitigation for nesting Stone-curlew has been built into the Scheme design and no access to the energy farm through these mitigation areas is required. Furthermore, the LEMP will clearly set out the requirements for seasonal avoidance of any areas which may be sensitive due to the potential presence of Stone-curlew and maintenance of these areas.

8.9.34 Taking into account embedded protection measures delivered through sensitive Scheme design, there will not be any cause for disturbance of Stone-curlew during ongoing operational maintenance. As such, this impact has been assessed as temporary low adverse, which results in a **negligible** effect, that is not considered significant.

Summary of Magnitude of Impact and Significance of Effect for Sunnica East Site

8.9.35 Table 8-14 summarises the sensitivity (value) of important ecological features, impacts and effects resulting from operation for Sunnica East Site.

Table 8-14: Summary of Magnitude of Impact and Significance of Effect for Sunnica East Site

Receptor	*Sensitivity (Value)*	*Description of Impact*	*Magnitude of Impact*	*Effect Category*	*Significant effect (Yes / No)*
Stone-curlew	Medium (county)	Disturbance and displacement from maintenance visits	Low adverse	Negligible	No

Decommissioning (2065)

Sunnica East Site and West Site

8.9.36 Decommissioning impacts are predicted to be similar to those arising during the construction period, although important ecological features may vary.

8.9.37 As in Sections 8.9.4 to 8.9.31, habitats and protected or notable species are likely to be subject to temporary loss of habitat or disturbance during decommissioning activities and appropriate measures will need to be put in place to minimise direct loss of habitat and disturbance. It is reasonable to assume that a suitable Decommissioning Environmental Management Plan will be in place to control this and suitably qualified ecologists in place to oversee compliance.

8.9.38 Taking into account that relevant legislation and policy will need to be adhered to when decommissioning takes place and appropriate measures will be put in place to monitor and manage this the impact of decommissioning activities on important ecological features has been

assessed as temporary low adverse, which results in a temporary minor adverse effect, that is not considered significant.

8.10 Additional Mitigation and Enhancement Measures

8.10.1 At this stage it is predicted that the Scheme design has embedded sufficient mitigation to avoid significant adverse effects to important ecological features, without additional mitigation measures being required. EIA is an iterative process, and should further mitigation be identified, *e.g*. if further ecological surveys determine other impacts, then the Scheme design will look to capture these.

8.10.2 The Scheme will look to deliver significant enhancements for biodiversity in line with national and regional policies and biodiversity priorities. A robust monitoring programme will also be defined in the DCO submission to ensure mitigation and enhancement measures are delivered successfully.

8.11 Residual Effects

8.11.1 As no additional mitigation measures identified, the residual effects remain as identified after the implementation of embedded mitigation measures. . Accordingly, no significant residual effects on ecological features are predicted during construction, operation or decommissioning of the Scheme.

8.12 Cumulative Effects

8.12.1 This section presents a preliminary assessment of cumulative effects between the Scheme and other proposed and committed plans and projects including other developments.

8.12.2 This preliminary cumulative effect assessment identifies for each receptor those areas where the predicted effects of the Scheme could interact with effects arising from other plans and, or projects on the same receptor based on a spatial and, or temporal basis.

8.12.3 Schemes have been screened for spatial and temporal overlaps with the Scheme. Where potential spatial and, or temporal overlap of ecological receptors was thought to occur, the specific ecological receptors that fall within any area of overlap were identified. If the ecological receptors identified were considered to be sensitive, the overlapping development was taken forward for cumulative assessment.

8.12.4 At this stage there are no plans or projects identified that are considered in combination to impact important ecological features identified in this assessment and considered in Section 8.9. Therefore, the main potential for ecological impacts during construction, operation and decommissioning of the Scheme is considered within the Site itself. Other schemes are not likely to contribute to the effects on protected species identified in this chapter and therefore the effects are likely to be not significant. The final assessment will be presented in the ES.

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