Botley West Solar Farm

Preliminary Environmental Information Report

Volume 1

Chapter 9: Ecology and Nature Conservation

30 November 2023

Approval for issue	
Christopher Lecointe	30 November 2023

Prepared by:

RPS
20 Western Avenue,
Milton Park,
Abingdon, Oxfordshire OX14 4SH,
United Kingdom

Prepared for:

PhotoVolt Development Partners GmbH., on behalf of SolarFive Ltd.

Contents

Tables

Appendices (See Volume 3, Appendices)

Annex number	Annex title
9.1	Desk Study
9.2	Phase 1 Habitat Survey Report
9.3	Great Crested Newt (GCN) Survey Report;
9.4	Wintering Bird Survey Report;
9.5	Reptile Survey Report;
9.6	Bat Survey Report;
9.7	Badger Survey Report
9.8	Habitats Regulations Assessment Report
9.9	Breeding Bird Survey Report

Figures (See Volume 2, Figures)

Figure number	Figure title
9.1a, 9.1b, 9.1c	Field Numbers
9.2a, 9.2b, 9.2c	Phase 1 Habitat Survey

Glossary

Term	Meaning
Baseline	The status of the environment without the Project in place.
Biodiversity Net Gain	An approach to development that leaves biodiversity in a better state than before. Where a development has an impact on biodiversity, developers are encouraged to provide an increase in appropriate natural habitat and ecological features over and above that being affected to ensure that the current loss of biodiversity through development will be halted and ecological networks can be restored.
European Protected Species	Species (such as bats, great crested newts, otters and dormice) which receive full protection under The Conservation of Species and Habitats Regulations 2017 and Conservation of Offshore Marine Habitats and Species Regulations 2017.
Habitats Regulations	The Conservation of Habitats and Species Regulations 2017
International sites	Designated nature conservation sites which include the National Site Network (designated within the UK) and Natura 2000 sites (designated in any European Union country). This includes Sites of Community Importance, Special Areas of Conservation and Special Protection Areas. As a matter of government policy, also includes sites designated under the Ramsar Convention.
Local sites	Non-statutory nature conservation sites designated under local plan policy.
National sites	Nature conservation sites with the highest level of value under domestic UK legislation including Site of Special Scientific Interest and National Nature Reserve.
Protected species	A species of animal or plant which it is forbidden by law to harm or destroy.
Ramsar sites	Wetlands of international importance that have been designated under the criteria of the Ramsar Convention. In combination with Special Protection Areas and Special Areas of Conservation, these sites contribute to the national site network.
Special Areas of Conservation	A site designation specified in the Conservation of Habitats and Species Regulations 2017. Each site is designated for one or more of the habitats and species listed in the Regulations. The legislation requires a management plan to be prepared and implemented for each SAC to ensure the favourable conservation status of the habitats or species for which it was designated. In combination with Special Protection Areas and Ramsar sites, these sites contribute to the national site network.
Special Protection Areas	A site designation specified in the Conservation of Habitats and Species Regulations 2017, classified for rare and vulnerable birds, and for regularly occurring migratory species. Special Protection Areas contribute to the national site network.

Abbreviations

Abbreviations	Meaning
BoCC	Birds of Conservation Concern
BNG	Biodiversity Net Gain
CEA	Cumulative effects assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
cSAC	Candidate Special Area of Conservation
CTA	Conservation Target Area
DWS	District Wildlife Site
ECoW	Ecology Clerk of Works
eDNA	Environmental DNA (Deoxyribonucleic acid)
EPS	European Protected Species
EU	European Union
GCN	Great Crested Newt
HDD	Horizontal Directional Drilling
HPI	Habitats of Principal Importance
HRA	Habitats Regulations Assessment
HSI	Habitat Suitability Index
IEF	Important Ecological Feature
INNS	Invasive Non Native Species
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
LWS	Local Wildlife Site
NERC	Natural Environment and Rural Communities
NNR	National Nature Reserve
NH_3	Ammonia
NO_x	Nitrogen Oxides
NRN	Nature Recovery Network
NVC	National Vegetation Classification
oLEMP	Outline Landscape and Ecology Management Plan
PEIR	Preliminary Environmental Information Report
PDWS	Proposed District Wildlife Site
PIR	Passive infra-red
pSPA	Potential Special Protection Area

Abbreviations	Meaning
PV	Photovoltaic
SAC	Special Area of Conservation
SPA	Special Protection Area
SPI	Species of Principal Importance
SSSI	Site of Special Scientific Interest
TN	Technical Note
TVERC	Thames Valley Environmental Records Centre
WCA	Wildlife and Countryside Act

Units

Unit	Description
%	Percentage
km^2	Square kilometres
km	Kilometres
m	Metres

9.1 Ecology and Nature Conservation

9.2 Introduction

9.2.1 Overview

9.2.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) has been prepared by RPS on behalf of PhotoVolt Development Partners GmbH (PVDP) for the Applicant, SolarFive Ltd (SolarFive). SolarFive is a licence holder under the Electricity Act 1989. SolarFive is also a company registered in the England and Wales (company no. 12602740).

9.2.1.2 PVDP intends to submit an application on behalf of SolarFive for development consent to the Planning Inspectorate (PINS) under the Planning Act 2008. The proposal is to install and operate approximately 840MWe of solar generation in parts of West Oxfordshire, Cherwell and Vale of White Horse Districts (the Project). The application will be accompanied by an Environmental Statement (ES) prepared in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended (the EIA Regulations), and other required documents including a statement on pre-application consultation.

9.2.1.3 This PEIR summarises preliminary results of the assessment to date, before being further refined and reported within the Environmental Statement. The assessment was carried out in accordance with the approach set out in the Scoping Report. The purpose of the PEIR is to inform the statutory consultation process, enabling consultees to understand and comment on the likely significant effects of the Project.

9.2.1.4 In particular, this PEIR chapter:

- sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation undertaken to date;
- presents the potential environmental impacts and effects on all aspects of ecology and nature conservation based on the information gathered and the analysis and assessments undertaken to date;
- identifies any assumptions and limitations encountered in compiling the environmental information; and
- highlights any necessary monitoring and/or mitigation measures that could prevent, minimise, reduce or offset the possible environmental effects identified in this chapter.

9.2.1.5 The assessment presented is informed by the following chapters:

- Volume 1, Chapter 8: Landscape and Visual Resources
- Volume 1, Chapter 10: Hydrology and Flood Risk
- Volume 1, Chapter 12: Traffic and Transport

9.2.1.6 This chapter also draws upon information contained within the following ecological reports:

- Appendix 9.1: Desk Study
- Appendix 9.2: Phase 1 Habitat Survey Report
- Appendix 9.3: Great Crested Newt (GCN) Survey Report
- Appendix 9.4: Wintering Bird Survey Report
- Appendix 9.5: Reptile Survey Report
- Appendix 9.6: Bat Survey Report
- Appendix 9.7: Badger Survey Report
- Appendix 9.8: Habitats Regulations Assessment Report
- Appendix 9.9: Breeding Bird Survey Report

9.2.1.7 The PEIR will inform pre-application consultation. Following consultation, comments on the PEIR will be reviewed and considered in preparation of the ES that will accompany the application to the Planning Inspectorate for development consent.

9.3 Legislative and policy context

9.3.1 Legislation

9.3.1.1 A range of legislation provides protection to habitats and species at an international, national and local level. The legislation relevant to this chapter is set out below.

The Conservation of Habitats and Species Regulations 2017 (as amended)

9.3.1.2 European Union (EU) Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ('the Habitats Directive') set out provisions for the protection of habitats and species.

9.3.1.3 Key parts of the Habitats Directive were transposed into law in England and Wales through the Conservation of Habitats and Species Regulations 2017, which continue to apply now that the UK has left the EU.

9.3.1.4 The Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') provide protection for certain species of plants and animals, referred to as European Protected Species (EPS). The Habitats Regulations set out those species that are protected and the activities that are prohibited, such as deliberate disturbance or causing damage to a breeding place.

9.3.1.5 The Habitats Regulations also provide for licences to be granted for certain purposes, such as projects that may affect protected species, subject to:

- there being no satisfactory alternative; and

- the action authorised not being detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

9.3.1.6 With respect to the Project, the species present have been identified and the likely significant effects assessed within this chapter. Where possible, effects on EPS have been avoided or minimised.

9.3.1.7 The Habitats Regulations also require that a Habitats Regulations Assessment (HRA) must be carried out for all plans and projects that are likely to have significant effects on European sites, which include Special Areas of Conservation (SACs), candidate SACs (cSACs) and Sites of Community Importance (SCI), Special Protection Areas (SPAs) and as a matter of policy, possible SACs (pSACs), potential SPAs (pSPAs) and Ramsar sites (listed under the Ramsar Convention).

9.3.1.8 In this chapter, the term 'European site' has been retained to refer to the above sites (Defra, 2021). However, they no longer form part of the EU's Natura 2000 ecological network and now form part of the National Site Network.

9.3.1.9 A HRA for the Project has been completed (Appendix 9.8: Habitats Regulations Assessment Report).

The Wildlife and Countryside Act 1981 (as amended)

9.3.1.10 The Wildlife and Countryside Act 1981 (as amended) ('the WCA 1981') is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in the United Kingdom.

9.3.1.11 It affords a number of species of flora and fauna and their habitats protection. This means that there are requirements for licences for certain activities that might otherwise be offences under the WCA 1981.

9.3.1.12 Sites of Special Scientific Interest (SSSI) are national sites legally protected under this legislation.

Countryside and Rights of Way (CRoW) Act 2000

9.3.1.13 The Countryside and Rights of Way Act 2000 ('CRoW Act') provides statutory rights to the public to access the countryside and registered common land. It upgrades the rights of way system; enhances the protection afforded to SSSIs and strengthens legislation of wildlife enforcement. The CRoW Act also expands the management arrangements for Areas of Outstanding Natural Beauty.

The Natural Environment and Rural Communities (NERC) Act 2006

9.3.1.14 Section 41 of the Natural Environment and Rural Communities Act 2006 lists the species and habitats of principal importance for the conservation and enhancement of biodiversity in England and acts as a guide to local

authorities in implementing their duties under Section 40, to have regard to the conservation of biodiversity in England.

9.3.1.15 The Natural Environment and Rural Communities Act 2006 is amended by the Environment Act 2021 (outlined below) which strengthens the existing duty to conserve biodiversity by adding the duty of biodiversity enhancement. Reports on action taken under this duty are to be produced by public authorities.

Environment Act 2021

9.3.1.16 The Environment Act 2021 sets out requirements for legally binding targets (Environmental Targets (Biodiversity) (England) Regulations 2023), plans and policies for environmental protection.

9.3.1.17 Schedule 15 of the Environment Act 2021, which is not yet in force, sets out provisions for biodiversity net gain (BNG) and amends the Planning Act 2008 ('the Planning Act'). The Government's consultation on implementation of Schedule 15 indicated that a single 'core' BNG statement may be developed, with a view to incorporating the requirements into updated National Policy Statements (NPSs) (Department for Environment, Food and Rural Affairs (Defra), 2022). The stated intention is for the requirements to be implemented no later than 2025.

9.3.1.18 The Environmental Targets (Biodiversity) (England) Regulations 2023 sets out the targets with respect to biodiversity that are legally binding on the government. It is split into a number of categories relating to the restoration of habitats and species extinction risks.

The Protection of Badgers Act 1992

9.3.1.19 The Protection of Badgers Act 1992 prohibits reckless and/or intentional cruelty, injury or killing of badger *Meles* meles and the interference with badger setts.

Wild Mammals (Protection) Act 1996

9.3.1.20 All wild mammals are protected against intentional acts of cruelty under the Wild Mammals (Protection Act) 1996. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

9.3.1.21 To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

The Hedgerow Regulations 1997

9.3.1.22 The Hedgerow Regulations 1997 are intended to protect 'important' countryside hedgerows from destruction or damage. Under the 'Wildlife and Landscape' criteria, a hedgerow is considered important if (a) it has existed

for 30 years or more; and (b) satisfies at least one of the criteria listed in Part II of Schedule 1.

9.3.1.23 Under the Hedgerow Regulations 1997, it is against the law to remove or destroy important hedgerows without permission from the local planning authority. Hedgerows on or adjacent to common land, village greens, protected sites and areas of conservation, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys are covered by these Regulations. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are not.

The Convention on Biological Diversity

9.3.1.24 The Convention on Biological Diversity entered into force in 1993 with the following three main objectives:

- the conservation of biological diversity;
- the sustainable use of the components of biological diversity; and
- the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

9.3.1.25 The objective is to encourage actions that will lead to a sustainable future. The Secretariat of the Convention is based in Montreal in Canada and aims to assist governments to implement the Convention and its programmes of work.

COP15 Kunming-Montreal Global Biodiversity Framework

9.3.1.26 During the COP15 meeting in December 2022, a new set of international goals for biodiversity was adopted called the Kunming-Montreal Global Biodiversity Framework. In total, 188 governments (including the UK) agreed to the Global Biodiversity Framework, committing to address the loss of biodiversity through the adoption of four goals to be achieved by 2050. All parties that adopted it committed to setting national targets to ensure it was achieved by this date.

9.3.2 Planning policy context

9.3.2.1 The Project would be located in the county of Oxfordshire, across an area of approximately 1,300 ha. The Project extends from an area of land in the north, situated between the A4260 and the Dorn River Valley near Tackley and Wootton, through a central section, situated broadly between Bladon and Cassington, and connecting to a section further south near to Farmoor Reservoir and north of Cumnor, where the Project would connect to the National Grid transmission network. The name ‘Botley West’ is derived from the location of the grid connection point.

9.3.2.2 The Project lies within the administrative areas of Cherwell District Council (CDC), West Oxfordshire District Council (WODC) and Vale of White Horse District Council (VWHDC) and Oxfordshire County Council (OCC). The majority of the Project lies within West Oxfordshire.

National Policy Statements

9.3.2.3 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to the Project. These are:

- overarching NPS for Energy (NPS EN-1) which sets out the UK Government's policy for the delivery of major energy infrastructure (DECC 2011a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (DECC 2011b); and
- NPS for Electricity Networks Infrastructure (NPS EN-5) (DECC 2011c).

9.3.2.4 These are currently being updated and draft versions were published for consultation in March 2023 (DESNZ, 2023a; DESNZ, 2023b; DESNZ, 2023c).

9.3.2.5 NPS EN-1, NPS EN-3, and NPS-EN-5, as well as the updated draft iterations, include guidance on what matters are to be considered in the assessment and also highlight a number of factors relating to the determination of an application and in relation to mitigation. These are summarised in **Table 9.1.1** below.

Table 9.1.1 Summary of designated and draft NPS EN-1, NPS EN-3 and NPS EN-5 document requirements relevant to Ecology

Summary of NPS requirement	How and where considered in the PEIR
NPS EN-1	
Where the proposal is subject to EIA, the applicant should ensure that the ES clearly sets out any effects on the environment, including specific fauna. An assessment is required of any likely significant effects of the proposal on the environment be they direct, indirect, secondary, cumulative, short, medium, long term, permanent, temporary, positive, or negative at all stages of the project. Methods for avoiding or mitigating adverse effects should be included. (NPS EN-1 paragraph 4.2.1)	Assessment of the potential impacts and subsequent effects of the Project relevant to ecology and nature conservation is considered in **Section 9.9**. The approach to mitigation is discussed in **Section 9.8.**
The ES should include an assessment of the effects on the environment arising from the pre-construction, construction, operation, decommissioning of infrastructure once completed but before it is operational. (NPS EN1 paragraph 4.2.3)	Construction, operation and maintenance and decommissioning effects of the Project relevant to ecology and nature conservation are assessed in **Section 9.9.**

Summary of NPS requirement	How and where considered in the PEIR
Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally and locally designated sites of ecological or geological conservation importance, on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity. (NPS EN-1 paragraph 5.3.3)	As part of this chapter the process of identifying designated sites has been undertaken and is described in the baseline environment **Section 9.5.** Assessment of the potential impacts of the Project on relevant ecological receptors are identified and considered in **Section 9.9.** Designated sites, protected and notable habitats and species relevant to ecology and nature conservation are considered in the technical appendices to this chapter (Volume 3, Appendix 9.1: Desk Study; Appendix 9.2: Phase 1 Habitat Survey Report; Appendix 9.3: Great Crested Newt (GCN) Survey Report; Appendix 9.4: Wintering Bird Survey Report; Appendix 9.5: Reptile Survey Report; Appendix 9.6: Bat Survey Report; Appendix 9.7: Badger Survey Report; Appendix 9.8: Habitats Regulations Assessment Report and Appendix 9.9 Breeding Bird Survey Report)
All Sites of Specific Scientific Interest (SSSIs) should be protected as if designated as sites of international importance, including those features of SSSIs not covered by international designation. (NPS EN-1 paragraph 5.3.10)	All relevant SSSIs are identified in **Section 9.5** and described in Volume 3 Appendix 9.1: Desk Study. The approach taken to assess the impacts and effects of the Project on SSSIs is the same as for international sites, including the application of the mitigation hierarchy and is described in **Section 9.9**.
Consideration of locally designated sites such as Local Nature Reserves (LNR) and Local Wildlife Sites (LWS) (NPS EN-1 paragraph 5.3.13)	All relevant locally designated sites are described in Volume 3 Appendix 9.1: Desk Study. Relevant locally designated sites have been considered as part of the assessment of the potential impacts in **Section 9.9**.
Many species and habitats have been identified as being of principal importance to biodiversity in addition to species that receive statutory protection under a range of legislative provisions. These species and habitats require conservation action. (NPS EN-1 paragraph 5.3.17)	Assessment of the potential impacts of the Project are considered in **Section 9.9**. The approach to mitigation is discussed in **Section 9.8.** In addition, all species afforded extra protection under the Conservation of Habitats and Species Act 2017 (as amended) and Schedule 1 of the WCA 1981 are considered in the relevant technical appendices to this chapter (Volume 3, Appendix 9.1: Desk Study; Appendix 9.2: Phase 1 Habitat Survey Report; Appendix 9.3: Great Crested Newt (GCN) Survey Report; Appendix 9.4: Wintering Bird Survey Report; Appendix 9.5: Reptile Survey Report; Appendix 9.6: Bat Survey Report; Appendix 9.7: Badger Survey Report; Appendix 9.8: Habitats Regulations Assessment Report; and Appendix 9.9 Breeding Bird Survey Report).
The applicant should include appropriate mitigation measures as an integral part of the proposed development. (NPS EN-1 paragraph 5.3.18)	The approach to mitigation for the Project at the PEIR stage is described in **Section 9.8**.

Summary of NPS requirement	How and where considered in the PEIR
Energy NSIP proposals, whether onshore or offshore, should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity, or the wider environment where possible. Applicants are encouraged to use the most current version of the Biodiversity Metric to calculate their biodiversity baseline and present planned biodiversity net gain outcomes. This calculation data should be presented in full as part of their application. (Draft EN-1 paragraph 4.5.4 – 4.5.5)	A BNG assessment is being prepared, using Natural England's Biodiversity Metric 4.0. A BNG report will be submitted as part of the ES.
The design process should embed opportunities for nature inclusive design. (Draft EN-1 paragraph 5.4.21)	The Project design seeks to include biodiversity enhancement as of the Project as it continues to develop, full details will be included as part of the ES.
Applicants should include measures to mitigate the direct and indirect effects of development on ancient woodland, veteran trees or other irreplaceable habitats during both construction and operational phase (Draft EN-1 paragraph 5.4.32	The approach to mitigation for the Project at the PEIR stage is described in **section 9.8**.
Applicants should produce and implement a Biodiversity Management Strategy as part of their development proposals. (Draft EN-1 paragraph 5.4.36)	The approach to mitigation and for the Project at the PEIR stage is described in **section 9.8**. An outline Landscape and Ecology Management Plan (oLEMP) will be submitted as part of the ES and include the necessary mitigation and enhancement measures for the Project.
NPS EN-3	
Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology. (NPS EN-3 paragraph 2.4.2)	Assessment of the potential impacts of the Project on ecology and nature conservation are considered in **section 9.9**. The approach to mitigation is discussed in **section 9.8**.
The scope, effort and methods required for ecology should have been discussed with the relevant statutory advisor. (NPS EN-3 paragraph 2.6.102)	Baseline survey methodologies have been presented and disseminated to relevant stakeholders including Natural England. Response to the scoping consultation is provided in **section 9.4**.
Applicants should consider earthworks associated with construction compounds, access roads and cable trenching. (Draft NPS EN-3 paragraph 3.10.71)	Specific locations of construction compounds, access roads and trenching are not yet known. As standard, the Applicant would seek to ensure relevant ecological receptors are safeguarded. More detail regarding avoidance and mitigation in respect of earthworks will be included within the ES.
Applicants should consider how security and lighting installations may impact on the local ecology. (Draft NPS EN-3 paragraph 3.10.71)	Assessment of the potential impacts of the Project on ecology and nature conservation are considered in **section 9.9**.

Summary of NPS requirement	How and where considered in the PEIR
Applicants should consider how site boundaries are managed. If any hedges/scrub are to be removed, further surveys may be necessary to account for impacts. (Draft NPS EN-3 paragraph 3.10.74)	Assessment of the potential impacts of the Project on ecology and nature conservation are considered in **section 9.9**. Where boundaries could be impacted, appropriate avoidance and mitigation will be considered.
Given the temporary nature of solar PV farms, sites should be configured or selected to avoid the need to impact on existing drainage systems and watercourses. (Draft NPS EN-3 paragraph 3.10.77)	The Project has been designed to avoid any change to water courses or existing drainage systems, all of which will be protected with appropriate buffers.
Applicants should consider enhancement, management, and monitoring of biodiversity in line with the ambition set out in the Environmental Improvement Plan and any relevant measures and targets, including statutory targets set under the Environment Act or elsewhere. (Draft EN-3 paragraph 3.10.81)	A BNG assessment is being prepared, using Natural England's Biodiversity Metric 4.0. A BNG report will be submitted as part of the ES.
Applicants are advised to develop an ecological monitoring programme to monitor impacts upon the flora of the site and upon any particular ecological receptors (such as bats and wintering birds). Results of the monitoring will then inform any changes needed to the land management of the site, including, if appropriate, any livestock grazing regime (Draft EN-3 paragraph 3.10.121)	The approach to mitigation and for the Project at the PEIR stage is described in **section 9.8**. An oLEMP will be submitted as part of the ES and include the necessary mitigation and enhancement measures for the Project including likely monitoring for the relevant ecological receptors.
NPS EN-5	
Consideration of the environmental consequences which can disturb sensitive habitats and have an impact on soils and geology. (NPS EN-5 paragraph 2.8.9, bullet point 3)	Assessment of the potential impacts of the Project on ecology and nature conservation are considered in **section 9.9**. The approach to mitigation is discussed in **section 9.8**.

The National Planning Policy Framework

9.3.2.6 The National Planning Policy Framework (NPPF) was published in 2012 and updated in 2018, 2019, 2021 and 2023 (Department for Levelling Up, Housing and Communities, 2023). The NPPF sets out the Government's planning policies for England.

9.3.2.7 **Table 9.1.2** sets out a summary of the NPPF policies relevant to this chapter.

Table 9.1.2: Summary of NPPF requirements relevant to Ecology

Policy	Key provisions	How and where considered in the PEIR
Planning policies and decisions should contribute to and enhance the natural and local environment. (NPPF Section 15 paragraph 174)	• Through minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and futures pressures.	The approach to mitigation at the PEIR stage is discussed in **section 9.8**. A BNG assessment is being prepared, supported by Natural England's Biodiversity Metric 4.0. A BNG report will be submitted as part of the ES and will include information on habitat enhancement and creation measures.
Plans should protect and enhance biodiversity. (NPPF Section 15 paragraph 179)	• Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity and wildlife corridors and steppingstones that connect them. • Promote the protection and recovery of priority species.	The existing baseline is presented in **section 9.5**. The approach to mitigation at the PEIR stage is discussed in **section 9.8**.

9.3.2.8 The Planning Practice Guidance (PPG) supports the NPPF and provides guidance across a range of topic areas. Relevant to this chapter is the guidance set out in relation to HRA and EIA (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2021). These sections offer guidance to inform the accurate assessment of impacts from the Project.

Local planning policy

9.3.2.9 The relevant local planning policies applicable to ecology based on the extent of the study areas for this assessment are summarised in **Table 9.1.3**.

Table 9.1.3: Summary of local planning policy relevant to this chapter

Policy	Key provisions	How and where considered in the PEIR
West Oxfordshire District Council Local Plan 2011-2031 Policy EH3: Biodiversity and Geodiversity		
Policy EH3: Biodiversity and Geodiversity;	• protecting and mitigating for impacts on priority habitats, protected species and priority species, both for their importance individually and as part of a wider network • avoiding loss, deterioration or harm to locally important wildlife and geological sites and sites supporting irreplaceable habitats • ensuring development works towards achieving the aims and objectives of the Conservation Target Areas (CTAs) and Nature Improvement Areas (NIAs) including promoting the conservation, restoration and re-creation of priority habitats, ecological networks and species within these areas • all major and minor applications demonstrating a net gain in biodiversity where possible. For major applications this should be demonstrated in a quantifiable way through the use of a Biodiversity Impact Assessment Calculator (BIAC) based on that described in the DEFRA Biodiversity Offsetting guidance or a suitably amended version	The existing baseline is presented in **section 9.5**. The approach to mitigation at the PEIR stage is discussed in **section 9.8**. The assessment of impacts is addressed in **section 9.9**.
Policy EH4: Public Realm and Green Infrastructure;	• avoid the loss, fragmentation loss of functionality of the existing green infrastructure network, including within the built environment, such as access to waterways, unless it can be demonstrated that replacement provision can be provided • maximise opportunities for urban greening such as through appropriate landscaping schemes and the planting of street trees • consider the integration of green infrastructure into proposals as an alternative or to complement 'grey infrastructure' (such as manmade ditches and detention ponds and new roads) • demonstrate how lighting will not adversely impact on green infrastructure that functions as nocturnal wildlife movement and foraging corridors.	The approach to mitigation and enhancement at the PEIR stage is discussed in **section 9.8**.

Policy	Key provisions	How and where considered in the PEIR
Cherwell District Council Adopted Cherwell Local Plan 2011-2031 (Part 1)		
Policy ESD10 Protection and Enhancement of Biodiversity and the Natural Environment;	• in considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources • The protection of trees will be encouraged, with an aim to increase the number of trees in the District • Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site. Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity • Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value • Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably • A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.	The existing baseline is presented in **section 9.5**. The approach to mitigation at the PEIR stage is discussed in **section 9.8**. The assessment of impacts is addressed in **section 9.9**.
Policy ESD17 Green Infrastructure;	• Pursuing opportunities for joint working to maintain and improve the green infrastructure network, whilst protecting sites of importance for nature conservation • Protecting and enhancing existing sites and features forming part of the green infrastructure network • Ensuring that green infrastructure network considerations are integral to the planning of new development.	The new green infrastructure anticipated to form part of the Project is set out in **section 9.9**.

Policy	Key provisions	How and where considered in the PEIR
Vale of White Horse District Council: Local Plan Part 1		
Core Policy 45: Green Infrastructure; and	• A net gain in Green Infrastructure, including biodiversity, will be sought either through on-site provision or off-site contributions and the targeted use of other funding sources. A net loss of Green Infrastructure, including biodiversity, through development proposals, will be resisted. • Proposals for new development must provide adequate Green Infrastructure in line with the Green Infrastructure Strategy. All major applications must be accompanied by a statement demonstrating that they have taken into account the relationship of the proposed development to existing Green Infrastructure and how this will be retained and enhanced.	The existing baseline is presented in **section 9.5**. The approach to mitigation at the PEIR stage is discussed in **section 9.8.** The assessment of impacts is addressed in **section 9.9**.
Core Policy 46: Conservation and Improvement of Biodiversity.	• Development that will conserve, restore and enhance biodiversity in the district will be permitted. Opportunities for biodiversity gain, including the connection of sites, large-scale habitat restoration, enhancement and habitat re-creation will be actively sought, with a primary focus on delivery in the Conservation Target Areas. A net loss of biodiversity will be avoided. • The level of protection and mitigation should be proportionate to the status of the habitat or species and its importance individually and as part of a wider network.	The existing baseline is presented in **section 9.5**. The approach to mitigation at the PEIR stage is discussed in **section 9.8.** The assessment of impacts is addressed in **section 9.9**.

9.4 Consultation and engagement

9.4.1.1 On 15th June 2023, the Applicant submitted a Scoping Report to PINS which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects for the construction, operation and maintenance and decommissioning phases. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Project would not have the potential to give rise to significant environmental effects in these areas.

9.4.1.2 Following consultation with the appropriate statutory bodies, PINS (on behalf of the Secretary of State) provided a Scoping Opinion on 24th July 2023. Key issues raised during the scoping process specific to ecology and nature conservation are listed in **Table 9.1.4**, together with details of how these issues have been addressed within the PEIR.

Table 9.1.4: Summary of scoping responses

Comment	How and where considered in the PEIR
Planning Inspectorate	
Scoping Report paragraph 5.4.6 states that the land is considered to be a suitable location taking into account its location on low productivity arable land of low ecological value. The Inspectorate considers that there is little evidence to support this statement as the results of ecological surveys are not presented in the Scoping Report and further surveys are required to determine what grade the agricultural land is, and subsequently, whether it is Best and Most Versatile (BMV) land. The ES should demonstrate how environmental baseline information such as ecological value and agricultural land classification has informed site selection, consideration of alternatives, and subsequently project refinement	Ecological surveys undertaken are presented in Volume 3, Appendix 9.2: Phase 1 Habitat Survey Report; Appendix 9.3: Great Crested Newt (GCN) Survey Report; Appendix 9.4: Wintering Bird Survey Report; Appendix 9.5: Reptile Survey Report; Appendix 9.6: Bat Survey Report; Appendix 9.7: Badger Survey Report; and Appendix 9.9 Breeding Bird Survey Report. Details of the Agricultural Land Classification, including BMV, are provided in Volume 3, Appendix 17.1.
Badger surveys are not included within the list of surveys currently being undertaken on site (paragraph 7.3.19). Furthermore, badgers are not listed as fauna considered Important Ecological Features (IEFs) requiring detailed assessment, as listed in paragraph 7.3.26. It is not clear why badgers have been scoped out of further assessment, particularly considering paragraph 7.3.14 states that signs of badgers and badger setts have been identified across the site. The ES should assess significant effects on badgers where they are likely to occur. The ES should ensure the ecological baseline is robust and justify the extent and scale of surveys undertaken. The Applicant should seek agreement from relevant stakeholders on the scale and extent of any surveys undertaken, evidence of which should be provided within the DCO application.	Badger surveys have been undertaken and are presented in Appendix 9.7: Badger Survey of the PEIR. The assessment of effects on badger is addressed in **section 9.10**.
The Applicant proposes to scope out effects from direct habitat loss as no habitat loss would occur within any of the identified designated sites. It is noted that Figures 4b and 5 identify that the red line boundary is adjacent to Wytham Woods Site of Special Scientific Interest (SSSI) and Blenheim Park SSSI. On this basis Natural England consider there is potential for direct habitat loss to these sites. The ES should assess significant effects from direct impacts to designated sites or explain how these effects, including habitat loss, are avoided and/or mitigated. The ES should explain how appropriate mitigation is secured through the application and how this has been informed by appropriate consultation.	The issue of direct habitat loss on designated sites has been assessed in the PEIR (**section 9.10.2**).

Comment	How and where considered in the PEIR
Impacts to designated sites from use of construction compounds and creation of mitigation areas are not included in Table 7.3 and paragraph 7.3.38. However, impacts from construction activities on designated sites are proposed. The Inspectorate considers that insufficient evidence has been provided to demonstrate that there would be no impacts during operation or from use of construction compounds and creation of mitigation areas on designated sites. This matter should be assessed in the ES where significant effects are likely to occur.	Both the use of construction compounds and creation of mitigation areas are included within the construction activities assessed (through habitat loss, for example, **section 9.10.2**).
The list of impacts to habitats and designated sites during operation in Table 7.3 of the Scoping Report omits potential impacts from the introduction or spread of INNS, although this is included for impacts to species without explanation. The ES should assess impacts to habitats and designated sites from the potential introduction/spread of INNS.	Assessment of effect of the spread of Invasive Non Native Species (INNS) is included within the PEIR (**section 9.10.7**).
Section 2 of the Scoping Report, which describes the existing baseline, does not identify Oxford Meadows SAC which is located to the east and southeast of the Proposed Development site. Although this site is shown on Figure 5 of the Scoping Report it is not clear whether impacts to this site will be assessed; paragraph 7.3.23 states that designated sites are 'likely' to require detailed assessment but impacts to this site are not further discussed. Scoping Report paragraph 7.3.20 states that the search area for statutory sites is 5km and that the only identified sites are SSSIs and National Nature Reserves. SACs, Special Protected Areas and Ramsars are not identified. For the avoidance of doubt, the ES should list all nationally, internationally, and locally designated sites located within the study area, identify them on a Figure, and assess significant effects where they are likely to occur.	Impacts to European designated sites (SAC, SPA and Ramsar sites) are considered within the PEIR in Appendix 9.8 Habitats Regulations Assessment Report. Impacts to all designated sites within the study area (**Table 9.1.9**) are also considered within the PEIR (**section 9.10**)
Scoping Report paragraph 7.3.19 sets out the ecological surveys currently being undertaken with paragraph 7.3.14 listing the species identified to date. Proposed surveys exclude other notable species such as dormice and wintering birds without explanation. Paragraph 7.3.26 lists the fauna to be assessed in the ES but this does not align with the proposed/current survey efforts; for example, non-breeding birds, fish etc. are omitted. The ES should justify the survey efforts and assess significant effects on IEFs identified within the ZOI where they are likely to occur.	Surveys have been scoped where there is potential for impacts - where no impacts are likely, the rationale for the exclusion of surveys for these IEFs is set out within the PEIR. Ecological surveys undertaken are presented in Volume 3, Appendix 9.2: Phase 1 Habitat Survey Report; Appendix 9.3: Great Crested Newt (GCN) Survey Report; Appendix 9.4: Wintering Bird Survey Report; Appendix 9.5: Reptile Survey Report; Appendix 9.6: Bat Survey Report; Appendix 9.7: Badger Survey Report; and Appendix 9.9 Breeding Bird Survey Report. Further surveys are ongoing in 2023 and will be reported within the ES.

Comment	How and where considered in the PEIR
Scoping Report paragraphs 7.3.34 to 7.3.37 identify mitigation likely to be required but it is unclear whether this accounts for buffer zones for watercourses, ancient woodland, or ancient and veteran trees. Buffer zones are indicated to be used to avoid development near ancient woodland in Scoping Report paragraph 5.4.11 however no distances have been defined nor how they will be implemented in accordance with the relevant guidance and secured through the DCO. The ES should describe and secure appropriate buffer zones for sensitive habitat types.	All such features would be protected by a suitable buffer zone including 8m to watercourses and 15m to ancient woodland. Buffer zones will be implemented through both site design and the Code of Construction Practice (CoCP)/oLEMP and secured by appropriate Requirement. The location of veteran and ancient trees is the subject of ongoing surveys that will be reported in the ES.
There is no information on ancient and veteran trees in the Scoping Report. The ES should identify any ancient and veteran trees and assess any significant effects on these receptors where they are likely to occur and propose adequate mitigation where identified.	Appropriate surveys of ancient and veteran trees will be included in the ES.
Natural England have identified areas of floodplain grazing marsh as a priority habitat that could be impacted by the Proposed Development, but these are not identified in the Scoping Report. The ES should identify areas of floodplain grazing marsh and assess significant effects to these habitats where they are likely to occur.	Floodplain grazing marsh HPI is included as a receptor within the PEIR.
Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	Noted.

Comment	How and where considered in the PEIR
Begbroke Parish Council	
Claims of increasing biodiversity are rubbish, not proven. Encourages weed growth not pasture. The proposals will not support current eco systems. How will hedges be maintained? – will they be left to grow wild, which impedes use of paths. No consideration is given to deer, who avoid paths used by people and dogs. No consideration given to Red Kite, Owls, birds of prey, hares and many insects, which are in decline. Skylark will be especially affected by the loss or arable land.	The Project site (including grasslands and hedgerows) will be managed as per the oLEMP, to be secured by appropriate Requirement. Surveys have been scoped where there is potential for impacts to species of conservation concern. Ecological surveys undertaken are presented in Volume 3, Appendix 9.2: Phase 1 Habitat Survey Report; Appendix 9.3: Great Crested Newt (GCN) Survey Report; Appendix 9.4: Wintering Bird Survey Report; Appendix 9.5: Reptile Survey Report; Appendix 9.6: Bat Survey Report; Appendix 9.7: Badger Survey Report; and Appendix 9.9 Breeding Bird Survey Report Where no impacts are likely and surveys scoped out, the rationale for this is set out within the PEIR. Impacts to birds are considered within **section 9.10**, including skylark. Surveys for barn owl are being completed in 2023 and will be reported in the ES.
Bladon Parish Council	
Para's 7.3.8, 7.3.14 and 7.3.19 – These paragraphs provide lists of surveys that have commenced and identify populations of fauna of conservation interest. These lists do not include other important mammals in the area such as deer and foxes. It may be that these types of mammals are not classed as of 'conservation interest' but due to the size of the area covered by the Project and the fencing in of multiple areas, the habitats of these and other mammals, including their travel corridors and their ability to move around the Site, will be affected by the Project. The impact on other mammals should be included in any ES assessments. The report does not include details on how the Project will affect the habitats within the enclosed areas of interest. An example of these areas are the ancient woodlands of Burleigh Wood and Bladon Heath, which are acknowledged under paragraph 2.1.12 as being enclosed but not forming part of the Site. Although these areas are excluded from the Project, fencing off the areas around the perimeter of these ancient woodlands and other areas of interest will affect the various species within those enclosed areas. The ES should assess the impact of enclosing these areas on the fauna and their habitats. It should be noted that neither deer nor foxes are mentioned anywhere within the Scoping Report.	Deer and fox are not species of conservation interest and, as such, are not considered within the assessment. Impacts to ancient woodland and other receptors from the presence of the Project are assessed within the PEIR (**section 9.10**).

Comment	How and where considered in the PEIR
Cherwell District Council	
Clarification that surveys in Paragraph 7.3.19 is not exhaustive and others, such as dormice and wintering birds, are considered. Clarification that direct and indirect ecological impacts of the decommissioning phase will be addressed in ES (Para 6.4.2 states full ecological enhancement plans would be provided at this phase, these may not address impacts from actual work and could be extensive. Aside from this, CDC satisfied the approach is acceptable.	Surveys for wintering birds have been completed and are reported in Volume 3, Appendix 9.4 of the PEIR. Surveys for dormice were scoped out given that all habitat that could be used by this species is to be retained. Both direct and indirect impacts during decommissioning have been considered in **section 9.10** for all IEFs.
Cumnor Parish Council	
Council has a very low degree of confidence in the statement (para 7.3.38) that 'no habitat loss would occur within any of the identified designated sites, at European, national or local level'. For example, in this Parish there are a number of 'ancient oaks' in the proposed development area. There are also many nesting protected species, such as skylarks and lapwings. Council would wish the applicant's assertion to be tested by adequate independently conducted assessments. Council would wish to see direct habitat loss effects included. Council believes 'migratory birds' should be added to the list of species in para 7.3.8 given the international importance of Farmoor reservoir and its environs (including its 3x nature reserves) for migratory species. Council would also wish RSPB and Thames Water to be consulted in this section given that the latter describes Farmoor as 'a unique habitat for wildlife' where 'January brings teal, water rail and little egret, who can often be seen enjoying the wetland, April sees ospreys wheeling across the water in search of fish, in the warm summer months swifts and swallows take to the skies – showing off their diving skills.	Direct loss of habitats within designated sites is assessed within the PEIR (**section 9.10**). Wintering bird surveys have also been conducted (Volume 3, Appendix 9.4 of the PEIR), and are included as a receptor within the PEIR recognising the importance of the area for wintering birds.
Environment Agency	
Under section 5.4.11, we would like to see the importance of the watercourses and corridors reflected in the imposition of ecological buffer zones around each of the watercourses. River-based habitats should be free to expand into the buffer zones, to allow natural expansion of valuable habitats wherever possible.	All water courses across the Project site have been protected with appropriate buffers. This includes a large area along the River Evenlode where floodplain meadow could be established.

Comment	How and where considered in the PEIR
Section 7.3.4 should mention that surveys for rivers and streams should use the MoRPh survey system. This system ensures robust capture of the ecology/morphology of both the channel and corridor. Habitats surveys, recorded as Phase 1 classifications, should provide details on how the habitat type has been converted to UK Habitats Classification types for the Biodiversity Net Gain (BNG) metric.	Surveys of any watercourses directly impacted by the Project would be undertaken and would include using the River MoRPH system. At this stage, no direct impacts to water courses are anticipated and, as such, no surveys of these receptors are considered necessary.
We are pleased to see that section 7.3.37 states that the BNG metric will be used to demonstrate measurable BNG for the development. The applicant should embed a mechanism to record & monitor ecological data on created, or evolving habitats, during the operation of the development. This will support BNG and facilitate the inclusion of these habitats into the Local Nature Recovery Network/Local Wildlife Site Designation.	The Defra BNG Metric will be used to demonstrate net gain. It is intended that the Project will achieve at least a 70% gain. Full details will be provided in the ES, to include full details of monitoring proposed.
We are pleased to see section 7.3.8 mention that field surveys have been conducted for various species. Water vole surveys should include all watercourses, including ordinary watercourses and ditches.	At this stage, no surveys for water vole are proposed as all habitats that could support this species are to be protected with appropriate buffers to ensure no impacts from loss of habitat etc.
We would like section 7.3 to recognize and consider the impact that temporary access structures/river crossings may have on ecological buffer zones. These are likely to have a negative impact within the ecological buffer zone, and suitable mitigation should be considered. The temporary effects of cable crossings should also be included, as-well as mitigation for the possible de-watering of any watercourses to allow cable installation.	All watercourse crossing will be achieved through Horizontal Directional Drilling (HDD) rather than any direct trenching. As such, no impacts from crossings are anticipated at this stage.
All of the watercourses within or adjacent to the development are failing to achieve good ecological status under the Water Framework Directive (WFD). We would like to see the development looking to improve the habitat value of all watercourses, and their associated floodplain, within and adjacent to the development. For main river, the environmental objectives of the Thames River Basin Management Plan, such as creating buffer zones, removing barriers, improving river geomorphology, should be implemented to improve the WFD status of the watercourses within the project area. This will support the WFD obligations of the Local Planning Authorities within which this development is located. Additionally, these actions could provide mitigation and/or enhancement/Biodiversity Net Gain opportunities for the development.	The landscape scheme for the Project has been specifically designed to enhance the River Evenlode corridor which it is anticipated would also help to improve the water quality of the river through the removal of agricultural run off from the surrounding farmland. The final design of the corridor will be subject to consultation and evolving design prior to the submission of the ES.

Comment	How and where considered in the PEIR
Freeland Parish Council	
Construction, enclosure and operation of the proposed solar farm sites would sever important wildlife corridors, reducing connectivity – a key requirement for a healthy countryside capable of adaption to climate change. Whilst there will be a huge loss of open foraging, grazing and feeding grounds for mammals and birds currently common throughout the area, including deer, badgers, foxes, hares, rabbits, bats, small rodents, raptors, owls and bats. There are many promises of increasing wildlife diversity, making new footpaths and cycle routes. However, cycling and walking between a sea of fenced solar panels rather than beautiful countryside is not an attractive proposition. Any wildlife returning after the construction would be surrounded by concrete, steel and glass. Not an encouragement for biodiversity. There is concern regarding the impact of extensive areas of panels on the population of British wild bee, an ancient species, long thought to be extinct, but recently discovered in the Blenheim estate. The panels and possible depletion of wildlife would affect their foraging habit and behaviour. There is no evidence, as claimed in the BWSF leaflet, that there would be 'significant environmental gains in Oxfordshire 'resulting from the solar farm, or 'a meaningful net gain biodiversity across the site area'. For their claim that 'existing landscape and ecological features, improving soil quality and introducing new habitats to provide an attractive area for a variety of wildlife' PVDP has produced no evidence as to how this would be measured or achieved. There is evidence, however, that solar panels can confuse insects and birds, especially water birds who realise too late that the panels are not water and crash into them.	All hedgerow and woodland corridors would be retained and protected with appropriate buffers. As such, no severance impacts are anticipated. Invertebrate scoping assessments have been undertaken and will be reported in the ES. The Biodiversity Net Gain of the project will be assessed using the Defra metric and reported in the ES.
Natural England	
The proposal could have potential impacts on Oxford Meadows SAC – advise that hydrological impacts and air pollution impacts are assessed. An assessment of any Likely Significant Effects on the SAC will be required as detailed in the Habitats and Species Regulations 2017.	Impacts to Oxford Meadows SAC are considered in Volume 3, Appendix 9.8 Habitats Regulations Assessment Report. This includes impacts associated with hydrology and air pollution.
The proposal could have potential impacts on Blenheim Park SSSI, Rushy Meadows SSSI, Wytham Ditches & Flushes SSSI and Wytham Woods SSSI. There are a number of potential impact pathways to consider at these sites during the construction and operational phases of the development which will require further assessment.	Potential impacts to SSSIs are considered within the PEIR (**section 9.10**).

Comment	How and where considered in the PEIR
Natural England consider robust assessment of the implications for ancient woodland to be of significant importance due to the scale, potential for loss of connectivity at the landscape scale and habitat fragmentation.	Impacts to ancient woodland are considered within the PEIR (**section 9.10**). The Project has been designed to enhance hedgerow links between blocks of ancient woodland to ensure that there is no loss of connectivity between these sites.
We advise that the topic of 'direct habitat loss effects within the boundary of designated sites' not be prematurely scoped out of the ES. The red line boundary for the development appears to be located adjacent to unit 5 of Wytham Woods SSSI and unit 3 of Blenheim Park SSSI, therefore direct impacts to these sites during construction and operation cannot be ruled out at this stage. We will require further information as to how potential impacts to these sites can be mitigated as the scheme evolves.	The impact of direct habitat loss on these sites has been assessed within the PEIR (**section 9.10**).
The assessment will need to include potential impacts of the proposal upon sites and features of nature conservation interest as well as opportunities for nature recovery through BNG. There might also be strategic approaches to take into account. We advise this include the emerging Local Nature Recovery Strategy (LNRS) for Oxfordshire which will be the key mechanism for planning and mapping local delivery of the NRN. The Nature Recovery Network (NRN) refers to a single, growing national network of improved joined-up, wildlife rich places which will benefit people and wildlife Local nature recovery strategies GOV.UK.	The BNG assessment of the Project will be set out in the ES. The LNRS and NRN have been used to guide the location of habitat creation and strategic habitat linkages. In particular, the location of the Project site at the confluence of a number of riparian systems provides the opportunity for landscape-scale benefits.

Comment	How and where considered in the PEIR
The development site is within or may impact on the following European/internationally designated nature conservation site(s): Oxford Meadows Special Area of Conservation The ES should thoroughly assess the potential for the proposal to affect internationally designated sites of nature conservation importance/European sites, including marine sites where relevant. This includes SPAs, SACs, listed Ramsar sites, candidate SAC and proposed SPA. The Habitats and Species Regulations 2017 require a determination as to whether the proposal is likely to have a significant effect on any European site, proceeding to the Appropriate Assessment stage where significant effects cannot be ruled out. An AA will be required where a plan or project is likely to have a significant effect upon a European Site, either individually or in combination with other plans or projects. Potential risk to international designated sites: the development is within or may impact on the following European/Internationally designated site(s): Oxford Meadows SAC (link in response) Features which the ES will need to consider: Lowland Hay Meadows, Creeping Marshwort Potential impact pathways where further information/assessment is required: Air Quality, The impact of additional vehicle movements both during construction and operation on the local road network and strategic road network considering Oxford Meadows SAC as a sensitive receptor alone and/or in combination with other plans or projects, Hydrological connectivity to the site, Groundwater Quantity impacts, Groundwater Quality impacts, Surface water Quantity impacts, Surface water Quality impacts, Hydrological impacts in the context of climate change/periods of drought/extreme rainfall events	The potential for impacts to European designated sites is considered within Volume 3, Appendix 9.8 Habitats Regulations Assessment.
The development site may impact on the following SSSIs: Blenheim Park SSSI, Rushy Meadows SSSI, Wytham Ditches and Flushes SSSI, Wytham Woods SSSI and Cassington Meadows SSSI. The ES should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSI and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.	An assessment of the potential impacts to nationally designated sites is included within the PEIR (**section 9.10**).

Comment	How and where considered in the PEIR
Not aware the applicant has considered regionally and locally important sites through as we have not had prior engagement – would welcome the Inspectorate reminding the applicant that the23houldd consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or other local group. The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. They may also provide opportunities for delivering beneficial environmental outcomes.	The location of local wildlife sites has been obtained from the local records centre. An assessment of the potential impacts to these is included in the PEIR (**section 9.10**).
Consideration should be given to the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area. The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.	A full suite of appropriate surveys have been undertaken on site during 2022 and are ongoing in 2023. Surveys that are complete are reported in the PEIR. Surveys that are ongoing will be reported in the ES.
An appropriate level habitat survey should be carried out, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.	A full suite of appropriate surveys have been undertaken on site during 2022 and are ongoing in 2023. Surveys that are complete are reported in the PEIR. Surveys that are ongoing will be reported in the ES.
The ES should include details of: • Any historical data for the site affected by the proposal (e.g. from previous surveys) • Additional surveys carried out as part of this proposal • The habitats and species present • The status of these habitats and species (e.g. whether priority species or habitat) • The direct and indirect effects of the development upon those habitats and species • Full details of any mitigation or compensation measures • Opportunities for biodiversity net gain or other environmental enhancement	Noted. This PEIR chapter is structured to follow this.
Advise that the ES specifically assesses the impacts on and potential for mitigation and compensation for the following priority habitats and species: • Floodplain Grazing Marsh	Floodplain Grazing Marsh is included as an Important Ecological Feature (IEF) within the PEIR.

Comment	How and where considered in the PEIR
Natural England consider the implications for ancient woodland to be of significant importance for this project due to its scale, the potential for loss of connectivity and indirect habitat fragmentation and degradation.	Details of the location of all parcels of ancient woodland have been obtained from Natural England's database. Potential impacts to such receptors have been considered within the PEIR.
The ES should use an appropriate biodiversity metric such as The Biodiversity Metric 4.0 – JP039 (naturalengland.org.uk) together with ecological advice to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve as a minimum a net gain in biodiversity. We encourage applicants to deliver at least a 10% net gain in biodiversity as best practice. The metric should be used to: • assess or audit the biodiversity unit value of land within the application area • calculate the losses and gains in biodiversity unit value resulting from proposed development • demonstrate that the required percentage biodiversity net gain will be achieved Biodiversity Net Gain outcomes can be achieved on-site, off-site or through a combination of both. On-site provision should be considered first. Delivery should create or enhance habitats of equal or higher value. When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g. Green Infrastructure Strategies or Local Nature Recovery Strategies.	The landscape masterplan for the Project has been designed with the aim of achieving at least a 70% BNG. This will be assessed using the Defra metric and reported in the ES.

Comment	How and where considered in the PEIR
Oxfordshire County Council	
Existing baseline conditions: It should be noted that as well as bordering sites of nature conservation interest, the Project area includes parts of Long Mead and Swinford Farm Meadow Local Wildlife Sites; historic water meadows with a range of rare and unique flora and fauna. The impact on these Local Wildlife sites must be fully assessed and alternative routes for the cable explored. The project area also requires crossing of the River Thames. Scope of baseline studies: It is recommended that the following surveys are also included within the baseline study (or sufficient justification provided to scope them out): dormouse, badger, protected plants. Effects proposed to be assessed; It is recommended that the potential operational effects of the solar panels as attractants for mobile species including birds and aquatic invertebrates is scoped into the assessment. Effects of air pollution from traffic arising from the scheme on the Oxford Meadows Special Area of Conservation will need to be screened under the Conservation of Habitats and Species Regulations 2017 and considered within the EIA. Biodiversity Net Gain; It is noted that the Defra Biodiversity Metric will be used to demonstrate the project will deliver a biodiversity net gain. This is welcome, and in line with the local approach prior to biodiversity net gain becoming mandatory. It should be noted that whilst BNG is not currently mandatory for NSIPs it will become so from November 2025.	It is proposed to HDD under the LWS/River Thames to ensure no impacts to these sites. Surveys for badger and botanical work have been completed and are reported in the PEIR (Volume 3, Appendix 9.2 Phase 1 Habitat Survey and 9.7 Badger Survey). The need for dormouse surveys has been scoped out on the basis that there are no impacts to habitats used by this species. An assessment of the potential effects on the Oxford Meadows SAC is included within the PEIR (Volume 3, Appendix 9.8 Habitats Regulations Assessment). The landscape masterplan for the Project has been designed with the aim of achieving at least a 70% BNG. This will be assessed using the Defra metric and reported in the ES.
Shipton-on-Cherwell & Thrupp Parish Council	
Our main concerns about this project mainly revolve around loss of amenity value to the parish community due to the proximity of the 316ha. Northern site to the Shipton-on-Cherwell & Thrupp parish boundaries, especially to the mature woodland known as Weaveley Furze which is an important local biodiversity 'hotspot', especially for fungi, which are not mentioned at all in the scoping reports, and is also an important nature recreational site for the parish. We would request that special attention is paid to this location in the EIA especially with regard to wildlife movement, light pollution, visual amenity and overall landscaping/proximity. Weaveley Furze is a marked component of the UK Nature Recovery Map. We do not have access to the entire Nature Recovery map but recommend that this be included in the landscape/biodiversity component of the EIA to assess potential overlap of proposed Nature Recovery areas with BWSF.	No significant areas of woodland have been included within the Project boundary (including Weaveley Furze). The Project has been designed to ensure that hotspots of biodiversity, such as woodlands, will have stronger links, reinforcing the aim of the Nature Recovery plan.
Para 7.3.8 We recommend the use of eDNA for Greater Crested Newt surveys.	eDNA surveys have been undertaken and are reported in Volume 3, Appendix 9.3 of the PEIR.

Comment	How and where considered in the PEIR
Tackley Parish Council	
- All elements of biodiversity, how design provides opp. For increase in natural biodiversity & measures that will ensure this is achieved. Consider in full 'Natural Capital Best Practice Guidance – Increasing biodiversity at all stages of a solar farm's lifecycle' (published by Solar Trade Associate aka Solar Energy UK 2022) and refer to evidence provided to House of Commons Environmental Audit Committee re technological innovations and climate change: onshore solar energy HC 856 (11 Jan 23)	The Natural Capital Best Practice Guidance - Increasing biodiversity at all stages of a solar farm's lifecycle' (published by Solar Trade Associate aka Solar Energy UK 2022) guidance will be referred to in the final ecology strategy for the Project site, to be presented in the ES. Other guidance suggested to be referenced, where relevant.
Whether protected, important or sensitive species of flora or fauna which use areas on or around Site e.g. for breeding, nesting, foraging, resting, over-wintering, or migration will be affected.	A full suite of appropriate surveys have been undertaken on site during 2022 and are ongoing in 2023. Ecological surveys undertaken are presented in Volume 3, Appendix 9.2: Phase 1 Habitat Survey Report; Appendix 9.3: Great Crested Newt (GCN) Survey Report; Appendix 9.4: Wintering Bird Survey Report; Appendix 9.5: Reptile Survey Report; Appendix 9.6: Bat Survey Report; Appendix 9.7: Badger Survey Report; and Appendix 9.9 Breeding Bird Survey Report. .Surveys that are ongoing will be reported in the ES.
Request from parishioner re impact on Long Mead Meadow - a LWS near Eynsham - site should be considered specifically.	The presence of Long Mead Meadow within the Project site has been considered (**section 9.10**) and the use of HDD to avoid any impacts to the site has been embedded into the Project.
Vale of White Horse District Council	
In addition to habitats listed in 7.3.25, recommended that Important Ecological Features (IEFs) include any priority habitats (e.g. arable margin) and ditches/land drains that meet the definition of watercourse provided in Section 72 of The Land Drainage Act 1991. Flexible approach to identifying IEFs is supported, depending on the results of ongoing ecological surveys (7.3.27). The ES should not be finalised until all relevant surveys are complete and results analysed. Impacts of any cabling beneath designated wildlife sites, priority habitat sites and ancient woodland, and impacts for wildlife and birds using Farmoor reservoir need to be scoped into the EIA	All arable margins are to be retained within the Project as they will form part of the buffers to hedgerows. Watercourses are identified as an IEF although they are to be retained with appropriate buffers. Impacts to other receptors listed included in PEIR (**section 9.10**) with impact assessment to be refined in the ES.
West Oxfordshire District Council	
There are no statutory protection designations within the northern area but there are likely to be areas of priority habitat which should be recorded and described accordingly in the Environmental Statement.	Areas of priority habitat within the project site have been recorded and are presented in Volume 3, Appendix 9.2 of the PEIR.

Comment	How and where considered in the PEIR
The ecological baseline description for the central area focuses on the proximity of protected sites and designations. There are also likely to be areas of priority habitat within the proposed development area which should be recorded and described accordingly in the Environmental Statement. Cassington Meadows SSSI also forms part of the Oxford Meadows Special Area of Conservation. In addition to the two areas of ancient woodland enclosed by the site, there is an additional area at Pinsley Wood, to the west of and immediately adjacent to the red line area. A significant proportion of the central area is located within the Wychwood Project Area, a project that aims to restore the landscape character and mix of habitats associated with the Royal Hunting Forest of Wychwood. A proposed cable routing option bisects Long Mead Local Wildlife Site to the west of the Thames at a potential crossing point for the river.	Impacts to Oxford Meadows SAC are considered in Volume 3, Appendix 9.8 Habitats Regulations Assessment Report. Impacts to areas of woodland outwith the Project site are considered within the PEIR (**section 9.10**). Impacts to the Long Mead LWS are considered in the PEIR (**section 9.10**).
Section 7.3 outlines ecological surveys that are currently being undertaken on site. Overall, it is felt that this list is comprehensive with the exception of dormice and wintering bird surveys.	Surveys for wintering birds have been completed and are presented in Volume 3, Appendix 9.4 of the PEIR. All habitat that could be used by dormice has been protected and, as such, surveys for this species have been scoped out. However, they are assessed as a potential receptor within the PEIR.
Paragraph 7.3.19 lists non-breeding bird surveys but it is not clear if that includes wintering bird surveys. Given the nature and location of the site it is likely wintering birds will be impacted by the development. Competent authorities must aim to provide or protect habitat that allows wild bird populations to maintain their numbers in the areas where they live naturally. Therefore, wintering bird surveys should be undertaken to inform an appropriate mitigation and compensation strategy. Presumably a number of hedgerow sections will require removal to permit access and installation, this could impact dormice a European protected species. As stated within the Dormouse Conservation Handbook (2nd Ed) the presence of dormice should be assumed in any areas of woody habitat (including plantations, hedgerows and scrub) within their range. Given the scale of the development and the close proximity of suitable habitat south of the A4095, including Burleigh Wood, Pinsley Wood and Bladon Heath woodland, it is felt the species is likely to be present. Section 7.3.16 states 'consultation will be undertaken with Natural England via their Discretionary Advice Service'. I would suggest EPS licensing policy 4 is discussed with Natural England to understand whether this is a suitable option for dormice.	Non-breeding bird surveys includes winter birds (Volume 3, Appendix 9.4 Wintering Bird Survey Report). At this stage, it is not intended to remove any habitat that could be used by dormice. As such, no licence is considered necessary. This position will be reviewed as the Project evolves. If considered necessary, surveys for this species will be undertaken and reported in the ES.

Comment	How and where considered in the PEIR
The applicant suggests that there would be no direct habitat loss within locally designated sites, although the red line boundary submitted with the Scoping Report indicates cable routing options, between the middle and southern sections, cross the Long Mead Local Wildlife Site. There should be sufficient flexibility in the scope of the environmental assessment, to ensure that the impacts of direct habitat loss are assessed as necessary where development options impact on designated sites and rare and irreplaceable habitats.	It is intended to use HDD beneath the LWSs to ensure there is no direct habitat loss. The impact from direct habitat loss on IEFs is set out in the PEIR (**section 9.10**).
Yarton Parish Council	
We would question the veracity of the statement 'Much land within the Site Boundary comprises agricultural fields bounded by hedgerows of varying quality' (7.3.12) and which hedgerows they apply to. No BWSF-surveyors have been seen around Yarnton and look forward to seeing results of surveys for PEIR/ES. Concern about number of desk-based surveys and based on old data. Site area near Yarnton includes a Priority area for Countryside Stewardship measures addressing Brown Hairstreak butterfly habitat issues. Project boundary close to area studied for GCN in Begbroke Wood. Shakespeare's Way is a Cherwell District Wildlife Site reflecting ancient woodland. Begbroke and Bladon Heath are Oxfordshire LWSs. Deer and hare spotted regularly, risk of habitat severance and loss of ecological connectivity in short term through construction activity and in the long term through miles of security fencing. Strongly request DEFRA Biodiversity Metric is used (7.3.37) and robust mitigation plan shared as promises of BNG ring hollow follow previous experiences with local developers. Panels will produce significant areas of shade, which could suppress rate of plant growth beneath them, impacting biodiversity and reducing number of sheep area could support.	Habitat surveys across the site are ongoing and will be reported in the ES with those completed to date reported in Volume 3 Appendix 9.2 Phase 1 Habitat Survey. Presence of LWSs is considered within the PEIR (**section 9.10**) with final impact assessment to be presented in the ES.
Cassington Parish Council	
Relevant policy documents should include Cassington NDP and Green Infrastructure Plan. NDP Policy CAS1 on the Cassington Nature Recovery Network and the latter much information on local nature assets.	The Oxfordshire NRN has been used to inform the landscape masterplan, in particular with respect to the corridor along the River Evenlode. The Cassington NRN will also be reviewed and any updates necessary included in the ES.

Comment	How and where considered in the PEIR
No statutory ecological designations within the central site both within and surrounding Cassington there are several zones within the Natural England Habitat Network. These include areas of habitat restoration (e.g. Worton gravel pits), Network Enhancement Zone 1 (fields to the east of Cassington), Network Enhancement Zone 2 (south of A40) and a Network Expansion Zone (areas surrounding Cassington village especially to the north west and south). These are detailed in the Green Infrastructure Plan which is part of the Cassington Neighbourhood Plan which was accepted by Referendum in June 2023. These areas are included in the Cassington Neighbourhood Plan, Policy CAS1 Cassington Nature Recovery Network. We note that CAS1 Provision C states that "Proposals that will lead to the loss of land lying within the Network and that will undermine its integrity will be resisted." Latest version of maps released by the Developer reveal plans to dig a trench through Long Mead meadow to enable their cables to cross the Thames near Eynsham. Long Mead is part of only 4 square miles of original floodplain hay meadow left in the UK and must be protected. 97% of this type of habitat was lost between 1930 and 1984 (Wildlife Trusts, 2012) so it is nationally scarce community of plants and animals. It featured in a film produced for Cop26 and it would be a huge embarrassment for the government if part of this important floodplain was disrupted on their watch.	All designated sites within the zone of influence have been considered in the ecology chapter of the PEIR (**section 9.10**). No trenching would take place through Long Mead meadow - cabling would be installed via HDD under the Meadow.
Given the nature of the proposal we envisage large-scale removal of the hedgerow matrix (whether temporarily or permanently) and either the removal of the woodland component or their isolation as a consequence of their connectivity with the hedgerow matrix being removed and fencing erected.	No hedgerows or woodland would be removed as part of the Project with all such features protected by suitable buffers.
No mention of aquatic birds	Full breeding and wintering bird surveys have been conducted and are reported in Volume 3, Appendix 9.4 and 9.9 of the PEIR.
GCN have been documented as travelling as far as 1.3km (link in full response) so why is only a 500m buffer proposed.	Natural England guidelines for GCN survey (English Nature, 2001) are 500m. As such, this has been used to scope initial survey zones.
The report specifically indicates that surveys will take place in waterbodies i.e. GCN breeding habitat – no mention is made of terrestrial surveys in those habitats which they need for dispersal, feeding and hibernation (of which hedgerows are key) after they leave the breeding ponds	The survey guidelines also set out the methods for detecting presence/absence from an area of land. These focus on whether they are present within the water bodies as GCN will always use these to breed but will not always use a given parcel of land during their terrestrial phase.

Comment	How and where considered in the PEIR
No mention made of bird surveys – most farmland bird species are highly mobile and will access of a matrix of habitat types as part of their life cycle. In particular, we stress the importance of agricultural land for migratory species which rely heavily upon large tracts of agricultural land and their associate hedgerows, particularly in the late autumn/winter period. Species of note here are winter thrushes.	Bird surveys of the site have been completed and reported in the PEIR (Volume 3, Appendix 9.4 and 9.9).
Hanborough Parish Council	
Scoping assessment will be made of the considerable areas of land which are not identified as designated sites. No mention of larger vertebrate mammals such as deer, hares, rabbits, all of which are known to inhabit the landscape and agricultural land taken up by BWSF - that is an omission in itself which should be corrected. PVDP seem to be suggesting will be no need to consider habitats within the specified designated sites such as Bladon Heath, Burleigh Wood and Pinsley Wood (the last of which comes within HPC's boundary). Appears PVDP do not wish to consider that wildlife – of all sorts – which might make use of those designated sites will also – without any doubt at all – be found in the areas to be part of BWSF. Wildlife does not recognise artificially constructed boundaries, and keep within them or away from them. Species of deer which roam over open farmland also use the protected woodlands. The construction of secure fencing around the various parts of the BWSF site will substantially affect wildlife using the designated sites as much as it will keeping animals out of the land to be covered in solar panels. HPC considers that it is essential that impact effects must be considered and scoped for the designated sites as well as for the more open land around those areas.	All designated sites within the Zone of Influence are considered (**section 9.10**). Brown hare are also considered as they are a Species of Principal Importance (**section 9.10**). Deer and rabbit are not considered as specific receptors but will be protected during construction as far as practicable, according to best practice. Fencing around the solar panels will be designed to be permeable to much wildlife, including foxes and badgers, while larger animals such as deer will still be able to move between woodlands through the corridors along the buffers to hedgerows.

9.4.1.3 Following scoping, consultation and engagement with interested parties specific to ecology and nature conservation has continued.

9.4.1.4 A summary of the key issues raised during consultation activities undertaken to date is presented in **Table 9.1.5**, together with how these issues have been considered in the production of this PEIR chapter.

Table 9.1.5: Summary of consultation relevant to this chapter

Date	Consultee and type of response	Issues raised	How and where considered in the PEIR
16th October 2023	*Natural England*	Introduction to Project and overview of work to date. Surveys completed and key results. Emerging effects and mitigation. Overview of landscape masterplan and ecology strategy	The survey results are provided in **section 9.6**, assessment of effects in **section 9.10** and mitigation detailed in **section 9.8**.

9.5 Baseline methodology

9.5.1 Relevant guidance

9.5.1.1 The following guidance documents have been considered as part of the Ecological Impact Assessment presented in this chapter:

- Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines on ecological impact assessment (CIEEM, 2022); and
- British Standards Institution (2013) Biodiversity – Code of Practice for Planning and Development: BS 42020:2013.

9.5.2 Scope of the assessment

9.5.2.1 The scope of this PEIR has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 9.1.4** and **Table 9.1.5**.

9.5.2.2 Taking into account the scoping and consultation process, **Table 9.1.6** summarises the issues considered as part of this assessment.

Table 9.1.6: Issues considered within this assessment

Activity	Potential effects scoped into the assessment
Construction and Decommissioning phase	
Construction and decommissioning activities	Effects on designated sites and habitats as a result of construction activity including habitat disturbance (eg light, noise pollution/introduction of toxic pollutants), changes to water quality/flow and changes in air quality (emissions from construction traffic (HGV/plant) and dust). Effects on species valued as important features of designated sites.
	Effects on habitats as a result of construction activity eg habitat loss, habitat disturbance (eg dust, light, noise pollution/introduction of toxic pollutants), through changes to air and water quality/flow.
	Effects on species as a result of construction activity within the Project boundary (eg direct killing or injuring of fauna, disturbance and displacement of species (particularly to those sensitive to noise and light disturbance), introduction or spread of invasive species, changes to water quality).
Use of construction compounds	Effects on habitats, including ancient woodland, as a result of use of construction compounds (eg habitat loss, habitat disturbance such as dust, light, noise pollution/introduction of toxic pollutants), introduction or spread of invasive species (in particular along the water courses within the Project site and surrounding land), changes to air/water quality/flow.
	Effects on species as a result of the use of construction compounds (eg direct killing or injuring of fauna, disturbance and displacement of species (particularly to those sensitive to noise and light disturbance), introduction or spread of invasive species).

Activity	Potential effects scoped into the assessment
Installation of cables	Effects on habitats, including ancient woodland, as a result of installation of cables (eg habitat loss, habitat disturbance such as dust, light, noise pollution/introduction of toxic pollutants), introduction or spread of invasive species (in particular along the water courses within the Project site and surrounding land), changes to air/water quality/flow).
	Effects on species as a result of installation of cables (eg direct killing or injuring of fauna, disturbance and displacement of species (particularly to those sensitive to noise and light disturbance), introduction or spread of invasive species).
Operation and maintenance	
Operation of solar farm	Effects on species as a result of operation of solar farm (eg collision risk, displacement of species, increased provision of habitat, improved connectivity).
	Effects on habitats through changes in size.

9.5.2.3 Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out is presented in **Table 9.1.7**.

Table 9.1.7: Issues scoped out of the assessment

Issue	Justification
Construction and Decommissioning Phase	
Habitat severance and loss of ecological connectivity	The Project has been designed to ensure that all features, such as woodland, hedgerows and watercourses, that could be used by foraging and commuting fauna are retained and will be protected and enhanced through the inclusion of appropriate buffers.
Changes in hydrology	The Project site would remain greenfield during construction with no significant change in the impermeable area across the site, as such, there would be no change in the hydrology regimes experienced by ecological receptors during construction.
Operational Phase	
Habitat severance and loss of ecological connectivity	The Project is largely autonomous during operation and, as such, there is no potential for severance or loss of connectivity as a result of the operation of the Project.
Changes in air quality	The Project is largely autonomous during operation and, as such, there is no potential for dust release or changes in air quality from increased traffic movements as a result of the operation of the Project.
Changes in hydrology	The Project site would remain greenfield during operation with no significant change in the impermeable area across the site, as such, there would be no change in the hydrology regimes experienced by ecological receptors during operation.

9.5.3 Study area and Zone of Influence

9.5.3.1 The following study areas have been developed based on standard good practice produced by CIEEM (CIEEM, 2022) in addition to professional judgement and to ensure the potential Zones of Influence (ZoI) for the Project, are appropriately covered.

9.5.3.2 Note that the cable corridors connecting the Northern, Central and Southern site areas were not included in survey work in 2022 as these had not been defined at the time of the 2022 survey season. Relevant survey data with respect to these areas are therefore being collected during 2023 and will be provided with the ES.

Designated Sites and Habitats

9.5.3.3 A study area up to 10km beyond the Project site was used to search for international and statutory designated sites. The study area was chosen following consultation with Natural England. International designated sites include SPA, SAC, cSAC, potential SPAs and Ramsar sites. Statutory designated sites of national importance include SSSI and National Nature Reserves (NNR). Statutory designated sites of local importance include LNR.

9.5.3.4 A study area of up to 2 km beyond the Project site was searched for non-statutory designated sites and Habitats of Principal Importance (HPI). The study area was chosen following consultation with Natural England. Non-statutory sites include LWS, Conservation Target Area (CTA), County Wildlife Site (CWS), District Wildlife Site (DWS), Proposed District Wildlife Site (PDWS) and LWS (these are described in **section 9.6** below). HPIs include those listed in Section 41 of the NERC Act.

Protected and Notable Species

9.5.3.5 Records of protected or otherwise notable species within a 2 km radius of the Project site boundary have been requested from the local records centres, except for bats, where a larger 10 km radius has been used in accordance with guidance from the Bat Conservation Trust (Collins, 2016). This study area has been agreed with Natural England.

9.5.3.6 The study area used for assessing protected and notable species is the Project site. It is recognised that effects on ecological receptors can occur beyond such limits, especially for mobile species such as GCN, bats and birds. Therefore, the study area includes (where necessary) water bodies within 500 m outside the Project site boundary if they are considered to support relevant species.

Zone of Influence

9.5.3.7 The study areas for designated sites, habitats and species have been used to determine the ZoI for the assessment of likely significant effects. This means that the ZoI has also adapted and responded as survey/modelling data are collected i.e. the definition of the ZoI has been an iterative process.

9.5.4 Methodology for baseline studies

9.5.4.1 It should be noted that some ecological survey and assessment work is ongoing and will be complete for inclusion in the ES. This is noted where relevant in the text below.

Desk Study

9.5.4.2 Historical biodiversity records were obtained from Thames Valley Environmental Records Centre (TVERC), see Volume 3, Appendix 9.1: Desk Study. These records included information relating to international and national statutory sites and local non-statutory designated sites. Other information obtained included HPI, Species of Principal Importance (SPI) and legally protected species.

9.5.4.3 Locations of statutory designated sites were accessed via the government 'MAGIC' website (MagicMap, 2016). A 1:25,000 OS map was used to identify nearby features such as ponds or green corridors that could provide habitat or connectivity to other areas.

Site-specific surveys

9.5.4.4 The scope and methodology of surveys undertaken for the Project were determined following an assessment of site conditions. The following site-specific surveys were conducted and are described below:

- Phase 1 Habitat survey;
- badger survey;
- bat activity surveys;
- breeding bird survey;
- wintering bird survey;
- great crested newt survey; and
- reptile survey

9.5.4.5 A summary of the methodologies used is provided below, with further details and plans showing survey areas provided in the relevant Appendix.

9.5.4.6 Other surveys are ongoing during 2023 and will be reported within the ES.

9.5.4.7 Surveys for all species groups will be updated, where necessary, pre-commencement, and details of the timings of surveys will be set out in the outline Construction Environmental Management Plan (oCEMP), to be secured via a requirement within the DCO.

Phase 1 Habitat Survey

9.5.4.8 The Phase 1 Habitat Survey included a survey of the baseline habitats within the Project site and an assessment of these habitats to support protected and notable species.

9.5.4.9 The Phase 1 Habitat Survey was undertaken in 2021 by Arcus (Volume 3, Appendix 9.2: Phase 1 Habitat Survey) covering part of the Project site where access was possible at the time of the survey (see Figures within Appendix 9.2). This was a high-level appraisal and is being updated with habitat surveys (including those for hedgerows) in 2023 that will be reported in the ES. These will include condition assessments as relevant to the Project.

9.5.4.10 Broadly, the survey followed the standard methodology (Joint Nature Conservation Committee, JNCC, 2016), and as described in the Guidelines for Preliminary Ecological Assessment (CIEEM, 2017). In summary, this comprised walking over the survey area and recording the habitat types and boundary features present.

9.5.4.11 A protected and notable species assessment was carried out in conjunction with the Phase 1 Habitat Survey. The Project site was assessed for its suitability to support protected and notable species, particularly GCN, reptiles, birds, badger, bats and other species of conservation importance.

9.5.4.12 The surveyor looked for evidence of use including signs such as burrows, droppings, footprints, paths, hairs, refugia and particular habitat types known to be used by certain groups, such as ponds. Any mammal paths were also noted down and where possible followed. Boundaries were walked to establish any entry points or animals signs such as latrines. Areas of bare earth were inspected for mammal prints. Areas of habitat considered suitable for protected species or those of conservation interest were recorded.

Bats

9.5.4.13 Bat activity surveys were undertaken in 2022. Given that all hedgerows/woodlands/water courses within the Project site are to be retained, bat activity surveys focused on the use of static detectors in strategically important locations to understand species distribution and levels of bat activity within the Project site.

9.5.4.14 Eight locations were identified across the Project site as likely to be important for bats to forage and commute. The choice of location was based on professional judgement and included consideration of landscape features that could be important to bats. The activity surveys comprised automated static detector recording, with bat detectors deployed across these locations for five consecutive nights and were set up to record 15 minutes before dusk and 15 minutes after dawn. Data obtained through static detector recording was then analysed using computer software. Static detectors were deployed in every month from April to October 2022.

9.5.4.15 Further details of the methodologies used, including the location of detectors, are provided in Volume 3, Appendix 9.6: Bat Survey Report which also includes plans showing survey areas.

Great Crested Newt

9.5.4.16 Waterbodies were assessed in relation to their suitability to support breeding populations of GCN using the Habitat Suitability Index (HSI) (Oldham *et al*. 2000). The method uses a series of parameters to define suitability including

the size, aquatic habitats, surrounding terrestrial habitats, presence of fish and/or wildfowl and the broader ecological context.

9.5.4.17 Environmental DNA (eDNA) testing for the presence of GCN was undertaken in each of the suitable ponds where access was possible within 500m of the Project site in late April 2022 as per Biggs *et al*. (2014).

9.5.4.18 When GCN are present in a waterbody, traces of their DNA are left in the water, remaining in the water column for up to three weeks. The eDNA testing uses multiple samples of water from each waterbody which are tested for traces of GCN DNA to assess presence/absence. The eDNA laboratory testing was conducted by Nature Metrics and the laboratory analysis was consistent with the good practice methods (Biggs *et. al*., 2014), including control analyses for DNA degradation during sample transport and inhibition of the detection of DNA from chemicals in the collected water sample.

9.5.4.19 Traditional population estimate surveys were also undertaken using a combination of egg searching, bottle trapping, netting and torch counts following standard methodologies (English Nature, 2001).

9.5.4.20 Further details of the methodologies used are provided in Volume 3, Appendix 9.3: Great Crested Newt Survey Report which also includes plans showing survey areas.

Wintering and Breeding Birds

9.5.4.21 The Project site was subject to a wintering bird survey, comprising six visits between September 2021 and February 2022. The surveys were based on a standard 'walkover' methodology as outlined in Gilbert *et al*. (1998) and Bibby *et al*. (2000).

9.5.4.22 The survey area was walked at a slow pace in order to locate and identify all individual birds. Suitable optical equipment was used where needed. All species encountered within the survey area were recorded and mapped. The conditions during all surveys were good with no rain, light winds and good visibility.

9.5.4.23 Similarly, the Project site was subject to a breeding bird survey between April and June 2022. These surveys were carried out in accordance with a standard territory mapping methodology as outlined in Gilbert *et al*. (1998) and Bibby *et al*. (2000).

9.5.4.24 The survey specifically assessed the number of notable species using the Project site, specifically red and amber listed species on Birds of Conservation Concern (BoCC) 5 list; and those listed under Section 41 of the NERC Act 2006 as Species of Principal Importance (SPI) for the conservation of biodiversity in England.

9.5.4.25 Due to access restrictions at the time, only part of the Project site was covered during the 2021/2022 surveys, data from which are reported here. Full details of the survey area are set out in Appendix 9.4: Wintering Bird Survey Report and Appendix 9.9: Breeding Bird Survey Report.

Reptiles

9.5.4.26 In September 2022, a total of 100 reptile refugia were placed in areas identified as providing the greatest suitability for reptiles and which had optimal basking opportunities within the Project site. The reptile survey was conducted using artificial refugia made from roofing felt measuring 50 cm x 50 cm and 50 cm x 100 cm. These provide shelter and basking opportunities for reptiles, which can be recorded on or under the refugia in suitable weather conditions.

9.5.4.27 The survey followed the recommended methodology described in the Herpetofauna Worker's Manual (Gent & Gibson, 2003) and Froglife's Surveying for Reptiles (Froglife, 1999).

9.5.4.28 Further details of the methodologies used are provided in Volume 3, Appendix 9.5: Reptile Survey Report which also includes plans showing survey areas.

Badgers

9.5.4.29 The areas within the Project site were systematically searched for evidence of badgers during walkover surveys in 2022. This involved looking for setts, latrines, hairs, footprints, runs, and any other signs of badger activity. Any evidence recorded was mapped.

9.5.4.30 Any incidental signs of badger activity were also noted during the course of other survey work undertaken on the Project site.

9.5.4.31 Further details of the methodologies used are provided in confidential Volume 3, Appendix 9.7: Badger Survey Report.

9.6 Baseline environment

9.6.1 Desk study

9.6.1.1 Information on ecology and nature conservation within the study area was collected through a detailed review of existing studies and datasets. These are summarised at **Table 9.1.8**.

Table 9.1.8: Summary of desk study sources used

Title	Source	Year	Author
TVERC	TVERC site	2022	TVERC
MAGIC Maps	Defra	2023	Defra

9.6.2 Designated sites

9.6.2.1 All designated sites within the study area and qualifying interest features that could be affected by the construction, operation and maintenance and decommissioning phases of the Project are set out in **Table 9.1.9** and **Table 9.1.10**.

9.6.2.2 Detailed information regarding the relevant qualifying interests of each designated site is located within Volume 3, **Appendix 9.1: Desk Study.**

Table 9.1.9: Statutory Designated sites

Designated site	Distance to the Project (km)	Designation
Oxford Meadows	0.97	SAC
Blenheim Park	0.01	SSSI
Cassington Meadows	0.97	SSSI
Holly Court Bank	4.72	SSSI
Hook Meadow and The Trap Grounds	4.49	SSSI
Long Hanborough Gravel Pit	1.02	SSSI
Pixey and Yarnton Meads	1.3	SSSI
Port Meadow with Wolvercote Common & Green	3.62	SSSI
Rushy Meadows	0.64	SSSI
Shipton-on-Cherwell & Whitehill Farm Quarries	3.62	SSSI
Stonesfield Common, Bottoms & Banks	3.89	SSSI
Sturt Copse	3.31	SSSI
Whitehill Wood	4.44	SSSI
Wolvercote Meadows	3.19	SSSI
Wytham Ditches and Flushes	1.25	SSSI
Wytham Woods	1.24	SSSI

Table 9.1.10 Non-Statutory Designated Sites

Designated site	Distance to the Project (km)	Designation
Acrey Waters	0.05	LWS
Begbroke Wood	0.07	LWS
Bladon Heath	0	LWS
Blenheim & Ditchley Parks	0.12	CTA
Blenheim Park - New Park & part of Great Park	1.73	PLWS
Burleigh Wood	0	LWS
Cassington Gravel Pit South	0	LWS
Cassington to Yarnton Gravel Pits	0.91	LWS

Designated site	Distance to the Project (km)	Designation
City Farm	0.91	LWS
Eynsham Wood	0	Eynsh am Wood Woodland Trust Reserve
Frogwelldown Lane	0.30	DWS
Glyme & Dorn Valleys	1.41	CTA
Kidlington Copse (Parkhill Copse)	1.74	PDWS
Langford Meadow	0.83	PDWS
Long Mead	1.61	LWS
Lower Cherwell Valley	0.59	CTA
Oxford Meadows & Farmoor	0.01	CTA
Pinsley Wood	0	LWS
Sansoms Green Lane	1.33	DWS
Somerford Mead	1.07	LWS
South Freeland Meadows	0.29	LWS
Swinford Farm Meadow	2	LWS
Thrupp Community Woodland	1.55	DWS
Woodstock Water Meadows	1.68	LWS
Wychwood & Lower Evenlode	1.72	CTA
Wytham Hill	1.25	CTA
Yarnton Sidings	1.05	DWS

9.6.3 Priority Habitats

9.6.3.1 Natural England's Priority Habitat Inventory identifies 'Coastal and Floodplain Grazing Marsh' within the Project site boundary. At this PEIR stage, this has not yet been ground-truthed with surveys ongoing through 2023. However, for the purposes of this assessment, it is assumed to be present within the Project site.

9.6.3.2 Outwith the Project site, but adjacent to it, Natural England's Habitat Inventory, also lists other HPIs including Broadleaved Woodland as being present.

9.6.4 Habitats

9.6.4.1 For the purpose of the survey, the Project site was divided into three survey parcels comprising Northern, Central and Southern Sites (Figure 9.2a, 9.2b and 9,2c). Field numbers are used as per Figure 9.1a, 9.1b and 9.1c.

9.6.4.2 Broadly, the Project site comprised a series of arable fields partitioned with hedgerows. Small blocks of deciduous woodland occur throughout the Project site and a number of small watercourses along with the River Evenlode.

9.6.4.3 Detailed habitat surveys are ongoing through 2023 and will be reported in the ES. For the purposes of this PEIR, an overview of those present within each survey area is provided, based on the habitat surveys completed to date.

Northern Site

9.6.4.4 The Northern site comprises Fields 1.1 to 1.18. All fields in this area were in arable use at the time of survey with some rough grass field margins.

9.6.4.5 Field boundaries comprised hedgerows of varying types, including either side of the public right of way that runs through the centre of the Project site (but is outwith the Project boundary).

9.6.4.6 A length of linear woodland was present in the south of Fields 1.6/1.7.

Central Site

9.6.4.7 Whilst the Central site comprises a limited number of improved grasslands, the majority of the area is dominated by arable farmland. Much of the arable land is bordered by intact species-rich hedgerows with intermittent ponds scattered across the landscape.

9.6.4.8 The River Evenlode flows through this part of the Project site, forming an important north-south corridor.

Southern Site

9.6.4.9 The Southern site comprises Denmans Farm and is another arable farmland-dominated landscape with mostly intact species-rich hedgerows and associated dry and standing water ditches running alongside.

Offsite habitats

9.6.4.10 The Project site boundary has been drawn to ensure that the majority of woodland blocks and all areas of ancient woodland are excluded. However, these habitats occur adjacent to the Project site and, as such, require consideration within the impact assessment process.

Ancient woodland

9.6.4.11 A number of parcels of ancient woodland are located within close proximity to the Project site (Figure 3.2a-c in Volume 3, Appendix 9.1: Desk Study). The closest parcels are located around the centre of the Project site comprising Pinsley Wood (adjacent to the western boundary), Burleigh Wood and Bladon Heath (around the centre of the Project site). In addition, Denman's

Copse and Saddle Copse are located adjacent to the southern area of the site.

Broadleaved woodland

9.6.4.12 Parcels of non-ancient woodland broadleaved woodland are located around the Project site boundary. Although specific surveys of such features have not been undertaken, it is assumed they all qualify as HPI. They are included as a receptor given their proximity to the Project site and their importance as landscape scale features for ecology.

Waterbodies

9.6.4.13 A number of other important watercourses are beyond but in proximity to the Project site, including the corridors associated with the Rivers Glyme and Cherwell. The Project site is located in between these corridors and, with the River Evenlode, present significant strategic corridors at a landscape scale. The River Glyme converges with the River Evenlode to the immediate north of the Project site, to the southwest of Bladon.

9.6.4.14 The River Evenlode joins the River Thames to the south of Cassington, to the east of the Project site.

9.6.4.15 A number of other waterbodies are present within the wider landscape including the lakes at Blenheim Palace (an interest feature of the Blenheim Park SSSI) and Farmoor Reservoir (designated as a LWS).

9.6.5 Species

Great Crested Newt

9.6.5.1 The majority of the Project site is considered to be sub-optimal terrestrial habitat for this species because it is dominated by arable fields. This suggests that the dense vegetation in the bases of hedgerows, alongside ditches, woodland and scrub are the core terrestrial habitats providing cover for GCN and will support species on which they would prey.

9.6.5.2 Sampling of eDNA returned positive results for GCN in Ponds 5, 805 and D2 (Volume 3, Appendix 9.3: GCN Survey Report). All of these ponds are outside of the Project site. Pond 5 is on the far side of the River Evenlode to the Project site and, as such, it is considered highly unlikely that any GCN from this population would be present within the Project site.

9.6.5.3 The presence of adult and larval GCN was identified during torching surveys in these ponds. As well as GCN, adults, larvae and eggs of common *Lissotriton* newt species were also found during the surveys.

9.6.5.4 By survey visit five (16 June 2022) to Pond 5, the pond had dried up, meaning no further surveys could be completed.

9.6.5.5 The peak count of adult GCN was a single male in Pond 5 and one larvae in Pond D2. Pond 805 did not record any GCN using any assessment methods but did return a positive eDNA result. As such, it is assumed that the population present in this water body is very small. Therefore, using the GCN

Population Size Class assessment (Froglife, 2001), this equates to a small GCN population within all ponds.

Wintering (non-breeding) Birds

9.6.5.6 Surveys through the winter of 2022/2023 identified a total of 78 species using the Project site, of which 41 qualify of being of conservation interest.

9.6.5.7 The following 13 species are species of Principal Importance listed under Section 41 of the NERC Act (2006) and listed as UK BAP Priority Species: corn bunting, dunnock, grey partridge, herring gull, house sparrow, lapwing, linnet, marsh tit, reed bunting, skylark, song thrush, starling and yellowhammer.

9.6.5.8 The following five species recorded during the wintering bird surveys are listed on EC Birds Directive (Directive 2009/147/EC): golden plover, kingfisher, little egret, peregrine and red kite.

9.6.5.9 The following 14 species recorded during the wintering bird surveys are included on the BoCC Red List: corn bunting, fieldfare, greenfinch, grey partridge, herring gull, house sparrow, lapwing, linnet, marsh tit, mistle thrush, skylark, starling, woodcock and yellowhammer.

9.6.5.10 The following 22 species are included on the BoCC Amber List: black-headed gull, bullfinch, Dartford warbler, dunnock, great white egret, green sandpiper, grey wagtail, greylag goose, kestrel, lesser black-backed gull, mallard, meadow pipit, moorhen, redwing, reed bunting, rook, snipe, song thrush, sparrowhawk, stock dove, woodpigeon and wren.

9.6.5.11 None of the species were recorded in numbers greater than 1% of the GB population.

Breeding Birds

9.6.5.12 In total, 98 species of bird were recorded across all surveyed areas. Of these 98 species, 66 were included within the breeding assemblage for the site (i.e. confirmed, probable or possible breeders).

9.6.5.13 A total of 34 of these species qualify as being of conservation interest. **Table 9.1.11** below summarises their status.

Table 9.1.11 Breeding birds within study area

Species	No. of pairs	UK breeding population	County status	Geographical importance of breeding population	BoCC Status	Criteria for status
Bullfinch	1 (3)	265,000	Common resident	Local	Amber	BDMp[2]
Cetti's warbler	1 (2)	3,450	Common but restriced breeder	Local	-	-

Species	No. of pairs	UK breeding population	County status	Geographical importance of breeding population	BoCC Status	Criteria for status
Corn Bunting	(3)	11,000	A local species or species that occurs annually in small numbers	Local	Red	HD, BDp[2], BDr[2]; BDMp[1], BDMr[1], WDMr[1]
Dunnock	61 (86)	2,500,000	Common resident	Local	Amber	BDMp[2]
Greenfinch	17 (26)	785,000	Widespread but declining breeding species	Local	Red	BDp[1/2]
Grey Partridge	(6)	37,000	Widespread but declining breeding species	Local	Red	BDp[1/2], BDMr[2]
Grey Wagtail	2 (3)	37,000	Common resident	Local	Amber	BDMp[2]
Greylag Goose	1	47,000	Common resident	Local	Amber	WL, WI
House Sparrow	12 (16)	5,300,000	Common resident	Local	Red	BDp[2]
Kestrel	1 (6)	31,000	Common resident	Local	Amber	BDMp[1/2]
Lapwing	3 (4)	97,500	Common resident	Local	Red	BDp[2]; ERLOB, BDMp[1], WDMp[1]
Linnet	21 (34)	560,000	Common resident	Local	Red	LC (br)
Mallard	2 (5)	61,000–145,000	Common resident	Local	Amber	WDMp[1/2]
Marsh Tit	(2)	28,500	Common resident	Local	Red	BDp[2]
Mistle Thrush	3 (20)	165,000	Common resident	Local	Red	BDp[2]; BDMp[1]
Moorhen	8 (9)	210,000	Common resident	Local	Amber	BDMp[2]
Nightingale	1	5,550	A local species or species that occurs annually in small numbers	Local	Red	BDp[1/2]; BDMr[2]

Species	No. of pairs	UK breeding population	County status	Geographical importance of breeding population	BoCC Status	Criteria for status
Red Kite	1 (5)	4,400	Common resident	Local	-	-
Reed Bunting	15 (17)	275,000	Common resident	Local	Amber	BDMp[2]
Rook	20 (21)	980,000	Common resident	Local	Amber	ERLOB
Sedge Warbler	8 (10)	240,000	Common resident	Local	Amber	BDMp[2]
Shelduck	1	7,850	A local species or species that occurs annually in small numbers	Local		
Skylark	65 (171)	1,550,000	Common resident	Local	Red	BDp[2]
Song Thrush	12 (37)	1,300,000	Common resident	Local	Amber	BDMp[2]
Sparrowhawk	(1)	30,500	Common resident	Local	Amber	BDMp[1]
Starling	4 (6)	1,750,000	Common resident	Local	Red	BDp[1/2]
Stock Dove	3 (20)	5,150,000	Common resident	Local	Amber	BI
Swift	(6)	59,000	Widespread breeding species in suitable habitat	Local	BI	BDp[1/2]
Tawny Owl	(3)	50,000	Common resident	Local	Amber	BDMp[1/2]
Whitethroat	66 (74)	1,100,000	Encountered in good numbers in suitable habitat	Local	Amber	BDMp[2]
Woodpigeon	34 (70)	5,150,000	Common resident	Local	Amber	BI
Wren	97 (198)	11,000,000	Common resident	Local	Amber	BI
Yellow Wagtail	1 (3)	19,500	A local species or species that occurs annually in small numbers	Local	Red	BDp[2] BDMp[1] BDMr[1/2] ,

Species	No. of pairs	UK breeding population	County status	Geographical importance of breeding population	BoCC Status	Criteria for status
Yellowhammer	54 (69)	700,000	Fairly common but declining resident	Local	Red	BDp[2]; BDMp[1]
() Total including probable/possible territories						

Abbreviations used in Table 4.1: HD: historical decline in the breeding population; BDp1/2: severe breeding population decline over 25 years/longer term; WDp1/2: severe non-breeding population decline over 25 years/longer term; BDr1/2: severe breeding range decline over 25 years/longer term; WDr1: severe non-breeding range decline over 25 years. BoCC Amber-list criteria ERLOB: Threatened in Europe; HDrec: historical decline – recovery; BDMp1/2: moderate breeding population decline over 25 years/longer term; WDMp1/2: moderate non-breeding population decline over 25 years/longer term; BDMr1/2: moderate breeding range decline over 25 years/longer term; WDMr1: moderate non-breeding range decline over 25 years; BR/WR: breeding/non-breeding rarity; BL/WL: breeding/non-breeding localisation; BI/WI: breeding/non-breeding international importance

Reptiles

9.6.5.14 The majority of the Project site surveyed during 2022 was not suitable for reptiles because it comprises arable fields with limited field margins. Some of these field margins were considered suitable for reptiles and were surveyed during 2022 where access was possible (Volume 3, Appendix 9.5: Reptile Survey Report).

9.6.5.15 No reptiles were recorded during any of the survey visits of the reptile refugia deployed in 2022. As such, it is considered unlikely that reptiles are present on site at this stage and they are not considered further in the assessment.

Bats

9.6.5.16 The majority of the Project site is considered to be of limited value to bats because it comprises intensively managed agricultural fields. However, the woodland edges, hedgerows and land close to the River Evenlode within the Project site were considered to provide good value foraging and commuting habitat for bats and would likely support a variety of night-flying invertebrates for bats to forage upon. These features were linked via hedgerows (on and off site) and other linear features to areas of suitable foraging and roosting habitat within the wider Project site and wider landscape.

9.6.5.17 Volume 3, Appendix 9.6 Bat Survey Report provides details of findings to date. The surveys identified at least nine species of bat using the Project site with considerable activity in all surveyed locations. Existing background data, as set out in Volume 3, Appendix 9.1: Desk Study had records of at least 12 species of bat, including the rare barbastelle, greater horseshoe and lesser horseshoe. Some of these records were very close to the Project site (within circa 300m) and others occurred within the woodland surrounding Blenheim Palace and Wytham Woods SSSI. As such, the Project site supports a diverse assemblage of bat species.

Badger

9.6.5.18 Habitat suitable for supporting badger, in the form of woodland, grassland and hedgerows was present within the Project site. Activity of this species was identified within the Project site during surveys.

9.6.5.19 For badger welfare purposes, information on locations of setts is not disclosed here. This information will be provided as a confidential appendix to the PEIR.

Terrestrial invertebrate assemblage

9.6.5.20 Surveys of the terrestrial invertebrate assemblage are ongoing and will be reported in the ES. The majority of the Project site is considered to be of low value to invertebrates, comprising intensively managed agricultural fields. However, the hedgerows, woodland edge and watercourses are likely to be of higher value. As such, the assemblage is considered as a receptor within this assessment.

Dormice

9.6.5.21 Dormice populations have been recorded in the local area (Volume 3, Appendix 9.1: Desk Study). The network of continuous hedgerows within the Project site provide habitats that could support dormice. Most are wide, have a dense structure, support varied food sources and have good connectivity to woodland blocks.

9.6.5.22 No specific surveys for dormice have been undertaken on the basis that all potential habitat is being retained and will be protected during the construction and operation of the Project. However, they are considered as a receptor within this assessment.

Other species

9.6.5.23 The water courses around the Project site, including the River Evenlode, are suitable for both otter *Lutra lutra* and water vole *Arvicola amphibius* and both have been recorded within 2km of the Project (Appendix 9.1: Desk Study).

9.6.5.24 The water courses are also suitable for fish, aquatic invertebrates and aquatic macrophytes.

9.6.5.25 Given that all water courses will be protected with appropriate buffers during both construction and operation of the Project, no specific surveys for these species have been undertaken. Water vole are considered as a receptor within this assessment by virtue of the assessment of effects on the water courses as a receptor (i.e. measures to protect the water course will also protect the fauna that use them).

9.6.5.26 Otters are assessed as an individual receptor given their ability to forage away from water courses.

9.6.5.27 The Project site is also suitable for a range of other species including brown hare *Lepus europaeus* and hedgehog *Erinaceus europaeus.* No specific surveys have been undertaken for these species, given that they do not receive any specific protection. There have been incidental sightings of hare around the Project site during other surveys. Both species are therefore considered as receptors.

9.6.6 Future baseline conditions

9.6.6.1 For the next five to 10 years, the Project site's future baseline is expected to remain similar to the existing baseline, with no significant changes anticipated.

9.6.6.2 Climate change is expected to bring a warmer environment in the UK, with hotter summers likely to continue over the next 50 years according to UK Climate Projections. Land is expected to dry out with moisture disappearing from the soils. Changing rainfall patterns are expected to become more unpredictable and could lead to a decline in habitats that require water.

9.6.6.3 Given the likely changes in habitat composition in the long term, there may be changes in the distribution and population density of protected and notable species across the Project site. However, it is difficult to accurately assess the potential impacts of climate warming on ecological receptors and their respective population changes as other environmental factors should also be assessed.

9.6.6.4 Land use may change from arable farmland but, in the absence of the Project, is likely to continue as agriculture. As such, a similar future ecological baseline is anticipated.

9.6.7 Important Ecological Features

9.6.7.1 **Table 9.1.12** identifies the IEFs taken forward into the assessment.

Table 9.1.12: Key receptors taken forward to assessment

Receptor	Description	Sensitivity/value
Habitats and Sites		
Internationally Designated Sites	Conservation of Habitats and Species Regulations 2017	International
Nationally Designated Sites	Wildlife & Countryside Act 1981 . Supports NERC Act 2006 Section 41 Habitats of Principal Importance	National
Locally Designated Sites	Considered in local authority policies under the domestic planning regime with applications made to local authorities.	County
Ancient Woodland	Designated ancient woodland	National
Broadleaved Woodland HPI	NERC Act 2006 Section 41 Habitats of Principal Importance	National
Floodplain Meadow HPI	NERC Act 2006 Section 41 Habitats of Principal Importance	National
Hedgerows and associated field boundaries HPI	NERC Act 2006 Section 41 Habitats of Principal Importance	National
Waterbodies (including ponds and the River Evenlode)	NERC Act 2006 Section 41 Habitats of Principal Importance	National

Receptor	Description	Sensitivity/value
Protected and Notable Species		
Breeding bird assemblage	Based on criteria in Fuller (1980), the breeding bird assemblage of 66 species recorded within the survey area over 2022 and 2023 reaches a threshold of county importance.	County
Wintering bird assemblage	Project site supports a range of bird species of conservation importance. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of county importance.	County
Great crested newt	GCN are protected through inclusion in the Habitats Regulations. They are a EPS and as such any development works which could affect them may require a licence from Natural England to comply with the Habitats Regulations. They are also a NERC Act 2006 Section 41 Species of Principal Importance	County
Badger	Badgers are protected under the Protection of Badgers Act 1992.	Local
Bat species assemblage	All bat species are protected through inclusion in the Habitats Regulations. They are EPSs and as such any development works which could affect them may require a licence from Natural England to comply with the Habitats Regulations. Barbastelle, Bechstein's, noctule, soprano pipistrelle and brown long-eared bats are NERC Act 2006 Section 41 Species of Principal Importance. Bechstein's bat and barbastelle are Rare in the UK and the distribution of alcathoe is unknown.	County
Terrestrial invertebrate assemblage	Terrestrial invertebrate assemblage within the Project site considered to be of no more than local value. Given the nature of the habitats present within the majority of the Project site (arable fields), it is likely that such populations are focused within the hedgerows and woodlands as well as along the River Evenlode corridor.	Local

Receptor	Description	Sensitivity/value
Dormice	Dormice are protected through inclusion in the Habitats Regulations. They are a EPS and as such any development works which could affect them may require a licence from Natural England to comply with the Habitats Regulations. They are also a NERC Act 2006 Section 41 Species of Principal Importance.	County
Otter	Otters are protected through inclusion in the Habitats Regulations. They are a EPS and as such any development works which could affect them may require a licence from Natural England to comply with the Habitats Regulations. They are also a NERC Act 2006 Section 41 Species of Principal Importance.	County
Brown hare	NERC Act 2006 Section 41 Species of Principal Importance	Local
Hedgehog	NERC Act 2006 Section 41 Species of Principal Importance	Local

9.7 Key parameters for assessment

9.7.1 Maximum design scenario

9.7.1.1 The maximum design scenarios identified in **Table 9.1.13** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the PEIR. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (eg, different infrastructure layout), to that assessed here be taken forward in the final design scheme.

Table 9.1.13: Maximum design scenario considered for the assessment of potential impacts

Potential impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
Temporary and permanent habitat loss during construction	Yes	No	Yes	**Construction phase** Construction of the project is anticipated to last approximately 24 months. **Site preparation and site access** • Site preparation with a total Project area of 1,300 hectares. • Vehicular access to serve the installation areas would either be through existing field entrances or purpose-built new access roads. • Delivery of construction material, plant, equipment and electrical infrastructure to site. • Establishment of perimeter fence and main construction compound(s), placement of four temporary construction compounds (two in the Northern, one located in the Central and one located in the Southern sites) and temporary field compounds for installation areas. The exact locations of these compounds is not yet known. • Temporary construction compounds will be specifically sited to minimise environmental impact. Topsoil and	The maximum NGET substation and associated access/maintenance roads and infrastructure represents the greatest areas of permanent habitat loss during construction. Trenching for the AC cables and associated compounds across the entire Project site represents the greatest potential area of temporary habitat loss during the 24 month construction period. Temporary habitat removal would result from the creation of trenches for electrical cabling and deployment of construction and field compounds. Permanent habitat loss would result from the construction of the NGET substation, access tracks and areas for the siting of HV transformers as part of the construction phase. These areas could support protected and/or notable species. A similar area required for the AC cable trenching plus an additional working area (not currently defined) represents the greatest potential area of temporary habitat loss during decommissioning. Permanent loss of natural habitat is unlikely to result from the decommissioning phase.

Potential impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
The impact of habitat disturbance from noise, vibration and lighting	Yes	Yes	Yes	subsoil will be stripped from such areas and stored on site for replacement following the completion of construction works. • Temporary field compounds would comprise storage and welfare facilities as well as areas to provide crossing point construction over roads, rivers and railway. **Solar photovoltaic (PV) array and associated infrastructure construction** • Total combined developable area of solar array of 889 hectares. • Impact piling to a maximum depth of 2.5m to enable deployment of solar PV module mounting structures, totalling a maximum of 1,968,722 piles. • Mounting of approximately 2,058,904 modules across Project site. • Construction of 156 power converter measuring 12m long and 3m high.	The maximum NGET substation size and associated access/maintenance roads combined with the trenching for the AC cables across the entire Project site represents the maximum design scenario, leading to disturbance of habitats. Field boundaries and connected habitats would be retained, but could be subject to short term (up to one year) disturbance during construction that could deter species from utilising surrounding suitable habitats. Impact piling to 2.5m throughout the entire Project site represents the maximum design scenario. This could lead to continuous disturbance of species through noise and vibration impacts. Continuous movement of site personnel across seven days and frequent illumination of site as a result, represents the maximum design scenario during operation. The disturbance from lighting could deter species from using particular habitats around the Project site.
Pollution caused by accidental spills/sedimentation	Yes	No	Yes	• Construction of up to 8 High Voltage Transformers (L18m x W10m x H6m). • Earthworks for transformer foundations and National Grid Electricity Transmission (NGET) substation and associated excavations. • Movement of arisings from earthworks.	Vehicular movement, earthworks and installation of construction compounds to support site preparation and site access could lead to the accidental release of pollutants into the environment. This could lead to habitat alteration and degradation and changes in water quality in surrounding watercourses such as the River Evenlode.
The impact of spreading Invasive and Non-native Species (INNS)	Yes	No	Yes	• Construction of NGET substation within an area of land up to a maximum of 3.8ha with substation dimensions of 165m by 135m with a maximum height of 15m. • Trenching for AC cables to a maximum depth of 105cm	Vehicular movement and earthworks to support site preparation and site access have the greatest potential to cause the spread of INNS throughout the entire site. INNS could be transported throughout the site via machinery, soils and other materials.

Potential impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
The impact of dust generation on habitats and species	Yes	No	Yes	(which would be within fields). **Landscaping** • Habitat creation and management measures including (but not limited to) creation of new grassland, hedgerows (circa 29km planted and a similar length enhanced) and woodland planting (circa 5ha). • Creation of new enhancement corridor along River Evenlode. • Construction of fencing measuring a maximum height of 2 m with a maximum total project length of 111.5m. **Operational Phase** The Project is anticipated to become operational in October	Vehicular movement and earthworks to support site preparation and site access have the greatest potential to generate dust both during construction and decommissioning. This could lead to habitat alteration and degradation and deter fauna from using affected habitats.
The impact of changes in air quality from emissions due to increased traffic movement	Yes	No	Yes		HGVs required to transport materials to site will generate emissions of nitrogen oxides (NO_x), ammonia (NH_3) and subsequent deposition of nitrogen into habitats during movement on roads used to access the Project site. If the traffic flows are high enough and occur within 200m of designated sites (as per Highways England 2020), there is the possibility that such emissions may have both direct toxicity to plants and indirectly change the nutrient status of habitats and therefore change the species composition.

Potential impact	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
The impact of habitat creation	Yes	No	No	2027. **Operational Activities and Maintenance** • Movement of personnel across the Project site during daylight hours on foot or vehicle, seven days a week. • Lighting restricted to infra-red and passive infra-red motion sensors. • Monitoring of habitat creation and management measures. **Decommissioning phase** Decommissioning is anticipated to be completed in two years and to be completed within the 42 year lifespan of the Project. • Decommissioning is likely to operate within the parameters identified for construction (ie, any activities are likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction), albeit these parameters are likely to be smaller than the construction phase. • All solar PV array and associated infrastructure would be removed from the Project site during decommissioning and returned to former use, except for the NGET substation which would remain.	The Project would create new areas of grassland managed for ecological benefit, 29km of new hedgerow, 28km of reinforced existing hedgerow and 5ha of new woodland. This may impact a range of IEFs that could use these new habitats through improved connectivity, foraging, nesting and shelter potential.

[a] C=construction, O=operational and maintenance, D=decommissioning

9.8 Mitigation measures intended to be adopted as part of the Project

9.8.1.1 For the purposes of the EIA process, the term 'Measures adopted as part of the Project' is used to include the following types of mitigation measures (adapted from IEMA, 2016).

- Primary (inherent) mitigation - measures included as part of the project design. IEMA describes these as '*modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken'*. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
- Secondary (foreseeable) mitigation. IEMA describes these as '*actions that will require further activity in order to achieve the anticipated outcome'*. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through environmental management plan.
- Tertiary (inexorable) mitigation. IEMA describes these as '*actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects*'. It may be helpful to secure such measures through an Outline Code of Construction Practice or similar.

9.8.1.2 For the purposes of this PEIR, mitigation measures set out are those considered to be appropriate for the Project at this time. They may evolve and/or be refined in response to the statutory consultation process and/or other considerations.

9.8.1.3 Where relevant, measures have been identified that may result in enhancement of environmental conditions. The mitigation measures relevant to this chapter are summarised in **Table 9.1.14**.

9.8.1.4 Primary and tertiary measures that are intended to form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 9.9** below (ie, the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures that the Applicants are intending to commit to, are taken into account in the assessment of effects.

9.8.1.5 Where an assessment identifies likely significant adverse effects, further mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by IEMA as actions that will require further activity in order to achieve the anticipated outcome and may be imposed as part of the planning consent, or

through inclusion in the Environmental Statement (referred to as secondary mitigation measures in IEMA, 2016). For further or secondary measures both pre-mitigation and residual effects are presented.

Table 9.1.14: Mitigation measures intended to be adopted as part of the Project

Mitigation number	Measure adopted	How the measure will be secured
9.1	No removal of hedgerows, trees, woodland, ponds or watercourses. The Project has been designed to remove all areas of woodland from within the Order Limits.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description
9.2	All hedgerows, trees, ponds and woodland to have minimum of 5m buffer. All buffers to be protected with appropriate fencing, to be set up before construction commences. This distance of buffer is considered minimum distance sufficient to ensure impacts to such features are avoided.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description
9.3	All ancient woodland to have 15m buffer, as per Natural England guidance.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description
9.4	All watercourses to have 8m buffer, as per Environment Agency guidelines for protection of such features.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description
9.5	Creation of new landscape-scale corridor along River Evenlode.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description
9.6	All cable routing outwith panel fields to be within hardstanding of highways as far as practicable.	These measures would be secured through the DCO.
9.7	Completion of pre-commencement ecology surveys, as necessary, to ensure an up to date baseline with respect to the location and distribution of relevant protected species.	These measures would be secured through the DCO.
9.8	Deliver at least 70% Biodiversity Net Gain.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description
9.9	New skylark plots to be delivered within solar arrays.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description
9.10	Horizontal Directional Drilling (HDD) under hedgerows/woodland/watercourses and LWS.	These measures would be secured through the DCO.
9.11	Avoidance of impacts to Oxford Meadows SAC and all other designated sites along with sensitive habitats.	Committed within the Project design set out in: Volume 1, Chapter 6: Project Description

Mitigation number	Measure adopted	How the measure will be secured
9.12	Provision of Outline Landscape and Ecological Management Plan (oLEMP) to include details of habitat management to ensure delivery of at least 70% BNG. Any temporary land take for cable routes etc. to be restored to habitats of existing or greater ecological value. The oLEMP will also include details of ecological enhancements to be sited around the Project to include: • bee hives; • log piles and other refugia; • bird boxes on retained trees; and • bat boxes on retained trees.	These measures would be secured through the DCO.
9.13	Great crested newt European Protected Species Mitigation Licence.	Legal requirement.
9.14	Badger Protected Species Mitigation Licence.	Legal requirement.
9.15	Outline Code of Construction Practice to ensure effective management of environmental risk during the construction phase of the Project and supporting infrastructure. The CoCP will include regulatory guidance and industry best practice guidance including: • A surface and groundwater management plan • Construction method statement to include measures to minimise impacts on protected species. • Construction method statement for watercourse crossings that will include a bentonite breakout plan. • Construction lighting strategy to include methods to minimise impacts to wildlife. Lighting will be designed in accordance with Institute of Lighting Professionals /Bat Conservation Trust guidelines. • Dust Management Plan to set out how dust generation will be managed and minimised. • Vegetation clearance to be undertaken outside of nesting bird season or following check by Ecology Clerk of Works (ECoW). • INNS Management Plan.	These measures would be secured through the DCO.

Mitigation number	Measure adopted	How the measure will be secured
9.16	The following measures would be implemented to ensure that no badgers are harmed during the construction phase: • suitably sturdy fencing to be erected around all construction works to deter foraging badgers from the works' areas; • any excavated holes to have a wooden board placed in them over night so as to provide a means of escape should any badgers accidentally enter the excavation; and • any chemicals to be securely stored at night in a locked container. In order to avoid attracting badgers to the works area any food waste would be disposed of in appropriate bins or removed from site at the end of each day	These measures would be secured through the DCO.
9.17	Use of ECoW to oversee works as necessary.	These measures would be secured through the DCO.
9.18	Tree protection plans and associated Heras fencing of retained trees within and adjacent to the construction areas as specified by a Strategic Arboriculture Impact and Method Statement.	These measures would be secured through the DCO.

9.9 Impact assessment methodology

9.9.1 Overview

9.9.1.1 The significance of an effect is determined based on the sensitivity of a receptor and the magnitude of an impact. This section describes the criteria applied in this chapter to characterise the sensitivity of receptors and magnitude of potential impacts. The terms used to define magnitude and sensitivity are based on and have been adapted from those used in the Design Manual for Roads and Bridges (DMRB) methodology (Highways England *et al.,* 2020).

9.9.1.2 The approach to determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor as per Ecological Impact Assessment guidance produced by CIEEM (CIEEM, 2022). This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 4: Approach to Environmental Assessment.

9.9.2 Receptor sensitivity/value

9.9.2.1 The criteria for defining sensitivity in this chapter are outlined in **Table 9.1.15** below.

Table 9.1.15: Sensitivity criteria

Sensitivity	Definition
Very High	Habitats or species that have high or very high conservation importance, high vulnerability to impact and have no ability to recover.
	Habitats or species that have very high conservation importance, high vulnerability to impact and have low recoverability.
High	Habitats or species that have high or very high conservation importance, medium or high vulnerability to impact and has medium recoverability.
	Habitats or species that have high conservation importance, medium vulnerability to impact and has low recoverability.
	Habitats or species that have medium conservation importance, high vulnerability to impact and has low recoverability.
Medium	Habitats or species that have medium conservation importance, low vulnerability to impact and has low to medium recoverability.
	Habitats or species that have medium conservation importance, low, medium, or high vulnerability to impact and has medium recoverability.
Low	Habitats or species that have low conservation importance, low vulnerability to impact and high recoverability.
	Habitats or species that have low conservation importance, medium or high vulnerability to impact and medium or high recoverability.

Sensitivity	Definition
Negligible	Habitats or species that have low conservation importance, low vulnerability to impact and medium or high recoverability. Habitats or species that have not vulnerable to impacts.

9.9.3 Magnitude of impact

9.9.3.1 The criteria for defining magnitude in this chapter are outlined in **Table 9.1.16** below.

Table 9.1.16: Impact magnitude criteria

Magnitude of impact	Definition
High	A change in the size or extent of distribution of the habitat or the species (flora or fauna) population that is the interest feature of a specific protected site that is predicted to irreversibly alter the population in the short to long term and to alter the long term viability of the population and/or the integrity of the protected site. Impacts felt long term. Impacts predicted to be reversed in the long term (ie, more than five years) following cessation of the project activity.
Medium	A change in the size or extent of distribution of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site that occurs in the short and long term, but which is not predicted to alter the long term viability of the population and/or the integrity of the protected site. Impacts felt medium to long term. Impacts predicted to be reversed in the medium-term (ie, no more than five years) following cessation of the project activity.
Low	A change in the size or extent of distribution of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site that is sufficiently small-scale or of short duration to cause no long term harm to the feature/population. Impacts present for a short to medium duration. Impacts predicted to be reversed in the short term (ie, no more than one year) following cessation of the project activity.
Negligible	Very slight change of the habitat or the species population (flora or fauna) that is the interest feature of a specific protected site. Impacts present for a short duration. Impacts predicted to be reversed rapidly (ie, no more than circa six months) following cessation of the project related activity.
No change	No loss or alteration of species (flora or fauna) characteristics, features, or elements; no observable impact either adverse or beneficial.

9.9.4 Significance of effect

9.9.4.1 The significance of the effect upon ecology has been determined by considering the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 9.1.17**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.

9.9.4.2 In all cases, the evaluation of receptor sensitivity, impact magnitude and significance of effect has been informed by professional judgement and is underpinned by narrative to explain the conclusions reached.

9.9.4.3 For the purpose of this assessment, any effects with a significance level of minor or less are not considered to be significant in terms of the EIA Regulations.

Table 9.1.17: Assessment matrix

Sensitivity of Receptor	Magnitude of Impact			
	Negligible	Low	Medium	High
Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Minor	Minor or Moderate	Moderate or Major	Major
Very High	Minor	Moderate or Major	Major	Major

9.9.4.4 Where the magnitude of impact is 'no change', no effect would arise.

9.9.4.5 The definitions for significance of effect levels are described as follows:

- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category.
- Moderate: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process (in this case the DCO application). The cumulative effects of such factors may influence decision-making if they lead to an increase in the adverse or beneficial effect on a particular resource or receptor.
- Minor: These beneficial or adverse effects are generally, but not exclusively, raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.
- No change: No loss or alteration of characteristics, features or elements; no observable impact in either direction.

9.9.5 Assumptions and limitations of the assessment

9.9.5.1 It was not possible to obtain access to survey every part of the Project site during all of 2021/2022. Full access was possible in 2023 and surveys covering these areas are ongoing, to be reported in the ES. Where this is

relevant, it is noted in the assessment of effects below. Access to locations outwith the Project site is being determined.

9.9.5.2 It should also be noted that all surveys have inherent limitations in their design and are indicative of what is happening at a particular point in time. However, appropriate assumptions based on the information available and through applying professional expert judgement have been made for the purposes of assessment.

9.10 Assessment of effects

9.10.1.1 The impacts of the construction, operation and maintenance and decommissioning phases of the Project have been assessed and are identified in **Table 9.1.13**, along with the maximum design scenario against which each impact has been assessed.

9.10.1.2 A description of the potential effect on receptors caused by each identified impact is given below.

9.10.2 The impact of temporary and permanent habitat loss during construction and decommissioning

9.10.2.1 Construction and decommissioning of the Project may result in the temporary (eg cables) or permanent (eg substation) loss of habitat, which in turn may support protected or notable species and habitats. The maximum design scenario is represented by the maximum surface area of habitat loss as outlined in **Table 9.1.13** above. It is anticipated that much of the habitat loss due to the Project would be temporary in nature, with new grassland within the panel arrays re-sown after construction, as necessary.

Internationally Designated Sites

Construction phase

Sensitivity of the receptor

9.10.2.2 Internationally designated sites are considered to be those of the highest ecological value globally and have the highest level of protection within the UK. The nearest internationally designated site is the Oxford Meadows SAC 0.97 km south east of the Project.

9.10.2.3 The sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.2.4 The Project would not result in any direct or indirect habitat loss during construction within any internationally designated site within the ZoI.

9.10.2.5 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.6 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.7 Internationally designated sites are deemed to be of very high value. The sensitivity of the receptor is therefore, considered to be **very high.**

Magnitude of impact

9.10.2.8 The Project would not result in any direct or indirect habitat loss during decommissioning within any internationally designated site within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.9 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Nationally Designated Sites

Construction phase

Sensitivity of the receptor

9.10.2.10 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated sites to the Project site are the Strong Copse component of the Wytham Woods SSSI which is directly adjacent to the cable route corridor along the B4044 and Blenheim Park SSSI which is on the opposite side of the A4095 to the Project site boundary.

9.10.2.11 Such sites vary in their vulnerability to impacts and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats.

9.10.2.12 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.2.13 The Project would not result in any direct or indirect habitat loss during construction within any nationally designated site within the ZoI. Cables would be trenched within the existing carriageway along the B4044 when adjacent to Wytham Woods SSSI to ensure no indirect effects.

9.10.2.14 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.15 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.16 Nationally designated sites are deemed to be of high value. The sensitivity of the receptor is therefore, considered to be **very high.**

Magnitude of impact

9.10.2.17 The Project would not result in any direct or indirect habitat loss during decommissioning within any nationally designated site within the ZoI. The cabling near to such sites will be cut and left *in situ* to avoid any possibility of indirect effects on Wytham Woods SSSI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.18 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Locally Designated Sites

Construction phase

Sensitivity of the receptor

9.10.2.19 Locally designated sites are those considered to be of importance within the context of the county of Oxfordshire. The nearest locally designated sites to the Project are Long Mead LWS and Swinford Farm Meadow LWS, both of which occur within the cable easement north of Wytham Woods. A number of other locally designated sites occur adjacent to the Project site boundary.

9.10.2.20 Such sites vary in their vulnerability to impacts and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats (some are designated for their ancient woodland, for example).

9.10.2.21 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.2.22 The Project would not result in any direct or indirect habitat loss during construction within any locally designated site within the ZoI. The Project would involve HDD cables under the Long Mead LWS and Swinford Farm

Meadow LWS to ensure no loss of habitat within these sites during construction. All other locally designated sites will be protected by appropriate buffers to ensure they are protected during construction.

9.10.2.23 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.24 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.25 The sensitivity of the locally designated sites is considered to be **very high.**

Magnitude of impact

9.10.2.26 The Project would not result in any direct or indirect habitat loss during decommissioning within any locally designated site within the ZoI. Cables under the Long Mead LWS and Swinford Farm Meadow LWS would be cut and left *in situ* to avoid any impacts to these sites. All locally designated sites will be protected by appropriate buffers to ensure they are protected during decommissioning. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.27 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be no change, which is not significant in EIA terms.

Ancient woodland

Construction phase

Sensitivity of the receptor

9.10.2.28 Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. Ancient woodland is deemed to be of high value and none or low recoverability.

9.10.2.29 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.2.30 The Project has been designed to avoid any areas of ancient woodland and all that occur adjacent to the Project site boundary will be protected by a minimum of 15 m buffer, as per Natural England guidelines. There would

therefore not be any direct or indirect habitat loss during construction within any area of ancient woodland within the ZoI.

9.10.2.31 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.32 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.33 The sensitivity of the ancient woodland is considered to be **very high.**

Magnitude of impact

9.10.2.34 The Project would not result in any direct or indirect habitat loss during decommissioning within any ancient woodland within the ZoI. All appropriate buffers (as per construction) to such habitat would be respected. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.35 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be no change, which is not significant in EIA terms.

Broadleaved woodland HPI

Construction phase

Sensitivity of the receptor

9.10.2.36 Areas of non-ancient broadleaved woodland HPI have been excluded from within the Project site boundary but do occur adjacent to it. Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats.

9.10.2.37 As such, the sensitivity of the receptor is therefore **medium**.

Magnitude of impact

9.10.2.38 The Project has been designed to avoid any areas of woodland and all that occur adjacent to the Project site boundary will be protected by a minimum of a 5 m buffer (considered sufficient based on professional experience). Where any cable installation is necessary adjacent to woodland, this would be

completed following the principles set out in the Strategic Arboriculture Impact and Method Statement to ensure no impact to any trees.

9.10.2.39 There would therefore not be any direct or indirect habitat loss during construction within any area of broadleaved woodland HPI within the ZoI.

9.10.2.40 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.41 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.42 The sensitivity of the woodland HPI is considered to be **medium.**

Magnitude of impact

9.10.2.43 The Project would not result in any direct or indirect habitat loss during decommissioning within any woodland within the ZoI. All appropriate buffers to such habitat would be respected. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.44 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Floodplain Meadow HPI

Construction phase

Sensitivity of the receptor

9.10.2.45 Floodplain meadow is shown as occurring within the Project site on Natural England's Habitat Inventory. For the purposes of this assessment, it is considered to be of **medium** sensitivity, as an HPI.

Magnitude of impact

9.10.2.46 The current Project has been designed to avoid the floodplain meadow HPI area as it would be included within the River Evenlode enhancement area.

9.10.2.47 There would therefore not be any direct or indirect habitat loss during construction within any area of ancient woodland within the ZoI.

9.10.2.48 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.49 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.50 The sensitivity of the floodplain meadow HPI is considered to be **medium.**

Magnitude of impact

9.10.2.51 The Project would not result in any direct or indirect habitat loss during decommissioning within the floodplain meadow within the ZoI. All appropriate buffers to such habitat would be respected (likely to be similar to those adopted during construction). As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.52 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be no change, which is not significant in EIA terms.

Waterbodies (including ponds and watercourses HPIs)

Construction phase

Sensitivity of the receptor

9.10.2.53 Waterbodies, including ponds, ditches, streams and rivers (including the River Evenlode), have a high conservation importance, high vulnerability to pollution incidents, a potential to support protected species and have low recoverability.

9.10.2.54 As such, the sensitivity of these receptors is therefore **high**.

Magnitude of impact

9.10.2.55 Any waterbody that occurs within the Project site or adjacent to it will be protected by a minimum of a 5 m (ponds) and 8 m buffer (watercourses). Installation of any cables that cross such features would be via HDD.

9.10.2.56 There would therefore not be any direct or indirect habitat loss during construction of any waterbody within the ZoI.

9.10.2.57 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.58 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.59 The sensitivity of the waterbodies HPIs is considered to be **high.**

Magnitude of impact

9.10.2.60 The decommissioning of the Project would not result in any direct or indirect habitat loss within any waterbody within the ZoI. All appropriate buffers to such habitat would be respected (likely to be as for construction). As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.61 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Hedgerows HPI

Construction phase

Sensitivity of the receptor

9.10.2.62 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to re-establish following an impact when placed under a suitable management regime.

9.10.2.63 As such, the sensitivity of these receptors is therefore **medium**.

Magnitude of impact

9.10.2.64 The Project has been designed to retain all hedgerow within the Project site boundary with all cable routes to be via existing field accesses or buried within existing carriageways, where practicable. A 5 m buffer will be maintained around all field boundary hedgerows to ensure their protection during construction.

9.10.2.65 There would therefore not be any direct or indirect habitat loss during construction of any hedgerow within the ZoI.

9.10.2.66 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.67 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.68 The sensitivity of the hedgerow HPI is considered to be **medium.**

Magnitude of impact

9.10.2.69 The decommissioning of the Project would not result in any direct or indirect hedgerow loss within the ZoI. All appropriate buffers to such habitat would be respected. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.70 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be no change, which is not significant in EIA terms.

Breeding bird assemblage

Construction phase

Sensitivity of the receptor

9.10.2.71 The breeding bird assemblage within the Project site comprises 66 species along with a range of birds of conservation interest. The sensitivity of the assemblage is considered to be **medium**.

Magnitude of impact

9.10.2.72 The construction of the Project would lead to the loss of arable fields used by breeding bird species such as skylark. However, all hedgerows and woodland habitats would be retained and protected by suitable buffers and fencing during construction, as set out in **Table 9.1.14** above. As such, the Project would not result in the loss of habitat used by the majority of breeding bird species found across the Project site.

9.10.2.73 Any vegetation removal will be completed outside of the breeding season (March to August inclusive) unless first checked by a suitably-qualified ECoW.

9.10.2.74 Therefore, primarily on the basis of loss of habitat for ground nesting species, the magnitude is considered to be **low**.

Significance of effect

9.10.2.75 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.76 The breeding bird assemblage within the Project site comprises 66 species along with a range of birds of conservation interest. The sensitivity of the assemblage is considered to be **medium.**

Magnitude of impact

9.10.2.77 The grassland to be created under the solar arrays would have provided significant new habitat for breeding birds. At decommissioning, some of this would be damaged during the removal of panels from the Project site, although this would be temporary and reinstated post decommissioning. Such impacts would also be short term (<1 year). As such, the magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.2.78 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Wintering bird assemblage

Construction phase

Sensitivity of the receptor

9.10.2.79 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.10.2.80 The construction of the Project would lead to the loss of arable habitat across the majority of the Project site although all hedgerows and woodland would be retained. Species that rely on arable habitats for foraging over winter may be temporarily displaced into surrounding habitat. The final land use plan for the Project site is being developed and will be reported in the ES. It is intended that this will include areas of the Project site that would be of value to wintering birds to ensure continuation of habitat and foraging resource and this is likely to reduce the overall magnitude of impact over time.

9.10.2.81 However, there will still be an impact from the loss of arable habitat resource during construction that is predicted to be medium term (for the duration of construction). The magnitude of impact is therefore, considered to be **medium.**

Significance of effect

9.10.2.82 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **moderate adverse** significance which is significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.83 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.10.2.84 The grassland to be created under the solar arrays would have provided significant new habitat for wintering birds. At decommissioning, some of this would be damaged during the removal of panels from the Project site, although this would be temporary and reinstated post decommissioning. Such impacts would also be short term (<1 year). As such, the magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.2.85 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be low. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Great crested newt

Construction phase

Sensitivity of the receptor

9.10.2.86 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conservation importance and has medium ability to recover.

Magnitude of impact

9.10.2.87 There would be a temporary loss of small areas of low-quality terrestrial habitat in the form of arable land within fields near to the ponds that have been found to support GCN within and near to the Project site. There would be no loss of aquatic habitat for this species with all waterbodies protected during construction.

9.10.2.88 The impact is predicted to be limited in extent as the core habitats for this species would be the woodlands, hedgerows and associated margins all of which would be retained and protected rather than the arable fields where construction would take place. Any loss of habitat would be temporary (a maximum in any one location of circa 1 year) with habitat reinstated post construction.

9.10.2.89 The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.2.90 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.91 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conservation importance and has medium ability to recover**.**

Magnitude of impact

9.10.2.92 There would be no loss of waterbodies within the Project site during the decommissioning phase. The grassland to be created under the solar arrays would have provided significant new terrestrial habitat for this species. At decommissioning, some of this would be damaged during the removal of panels from the Project site, although this would be controlled via an appropriate Protected Species Licence and reinstated post decommissioning. Such impacts would also be short term (<1 year). As such, the magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.2.93 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Badger

Construction phase

Sensitivity of the receptor

9.10.2.94 It is considered that the sensitivity of the receptor is **low** as badger is of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.10.2.95 Badger activity was spread across the majority of the Project site (Appendix 9.7: Badger Survey). All of the setts identified were present either within the hedgerow network or in small parcels of woodland (both within the Project

site or in larger blocks external to it). All woodland/hedgerows would be protected during construction with at least 5m buffers and appropriate fencing. As such, it is not anticipated that any sett would need to be permanently closed. However, it may be necessary to temporarily close a sett for the duration of construction activities, depending on the distance the sett is from the solar arrays.

9.10.2.96 Any such closure would be completed under appropriate licence from Natural England and would include suitable mitigation, such as the provision of artificial setts, should that be necessary.

9.10.2.97 In addition, there would be a temporary (no more than one year in any particular location) loss of foraging areas of low-quality terrestrial habitat in the form of arable land within fields near to the setts during the construction phase, although no badger would be excluded with appropriate badger-permeable fencing used to secure the site.

9.10.2.98 The magnitude of impact is therefore considered to be **low.**

Significance of effect

9.10.2.99 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be low. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.100 It is considered that the sensitivity of the receptor is **low** as badger is of low conservation importance and has high ability to recover**.**

Magnitude of impact

9.10.2.101 The nature of impacts during decommissioning on badgers is likely to be similar to that during construction, with setts unlikely to be permanently lost but some disturbance necessitating temporary closures. This will be determined by surveys undertaken pre decommissioning to ensure an update of the baseline with respect to badger location on site.

9.10.2.102 Any such closure would be completed under appropriate licence from Natural England and would include suitable mitigation, such as the provision of artificial setts, should that be necessary.

9.10.2.103 The magnitude of impact is therefore considered to be **low.**

Significance of effect

9.10.2.104 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Bat species assemblage

Construction phase

Sensitivity of the receptor

9.10.2.105 It is considered that the sensitivity of the receptor is **medium** as the population of bats in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.2.106 All landscape features that could be used by foraging, commuting and roosting bats would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as per **Table 9.1.14** above). The arable fields across the Project site are considered to be of very low value to foraging bats and the loss of such habitat during construction is unlikely to have any direct or indirect impact on the local bat population.

9.10.2.107 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.108 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.109 It is considered that the sensitivity of the receptor is **medium** as the population of bats in the area around the Project is considered to be of county level conservation importance and has a relatively low ability to recover**.**

Magnitude of impact

9.10.2.110 The nature of impacts during decommissioning on bats is likely to be similar to that during construction, with all features that could be used by bats retained and protected with appropriate fencing.

9.10.2.111 The magnitude of impact is therefore considered to be **no change.**

Significance of effect

9.10.2.112 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Terrestrial invertebrate assemblage

Construction phase

Sensitivity of the receptor

9.10.2.113 It is considered that the sensitivity of the receptor is **low** as the invertebrate assemblage of the Project site is considered to be of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.10.2.114 All landscape features that are likely to be of value to invertebrates would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.1.14** above). The arable fields across the Project site are considered to be of very low value to invertebrates and the loss of such habitat during construction is unlikely to have any direct or indirect impact on the local population.

9.10.2.115 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.116 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be low. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.117 It is considered that the sensitivity of the receptor is **low** as the invertebrate assemblage of the Project site is considered to be of local conservation importance and has a relatively high ability to recover**.**

Magnitude of impact

9.10.2.118 The nature of impacts during decommissioning on invertebrates is likely to be similar to that during construction, with all features that could be used by such species retained and protected with appropriate fencing.

9.10.2.119 The magnitude of impact is therefore considered to be **no change.**

Significance of effect

9.10.2.120 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be low. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Dormouse

Construction phase

Sensitivity of the receptor

9.10.2.121 As set out in **section 9.5** above, although no specific surveys have been undertaken for dormouse, they are considered likely to occur within the hedgerow network on site and the surrounding woodland. It is considered that the sensitivity of the receptor is **medium** as the population of dormouse in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.2.122 All landscape features that could be used by foraging, commuting and nesting dormice would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.1.14** above).

9.10.2.123 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.124 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.125 It is considered that the sensitivity of the receptor is **medium** as the population of dormouse in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover**.**

Magnitude of impact

9.10.2.126 The nature of impacts during decommissioning on dormouse is likely to be similar to that during construction, with all features that could be used by this species retained and protected with appropriate fencing.

9.10.2.127 The magnitude of impact is therefore considered to be **no change.**

Significance of effect

9.10.2.128 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Otter

Construction phase

Sensitivity of the receptor

9.10.2.129 Although no specific surveys have been undertaken for otter, they are known to occur along the River Evenlode and, as such, are likely to use the Project site for commuting and foraging. There may also be holts located along the river where it passes within the Project site.

9.10.2.130 It is considered that the sensitivity of the receptor is **medium** as the population of otter in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.2.131 All landscape features that could be used by foraging, commuting, breeding and resting otter would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.1.14** above).

9.10.2.132 The arable fields across the Project site are considered to be of very low value to foraging otter and the loss of such habitat during construction is unlikely to have any direct or indirect impact on the local population.

9.10.2.133 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.2.134 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.135 It is considered that the sensitivity of the receptor is **medium** as the population of otter in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover**.**

Magnitude of impact

9.10.2.136 The nature of impacts of habitat loss during decommissioning on otter is likely to be similar to that during construction, with all features that could be used by this species retained and protected with appropriate fencing.

9.10.2.137 The magnitude of impact is therefore considered to be **no change.**

Significance of effect

9.10.2.138 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Brown hare and hedgehog

Construction phase

Sensitivity of the receptor

9.10.2.139 Although no specific surveys have been undertaken for either species, they are known to occur on site with incidental recordings of brown hare occurring from across the Project site.

9.10.2.140 It is considered that the sensitivity of the receptor is **low** as the population of both species in the area around the Project site is considered to be of local conservation importance and both have a moderate ability to recover.

Magnitude of impact

9.10.2.141 Areas of arable field habitat for both brown hare and hedgehog would be lost as a result of the Project temporarily (from construction compounds/cable laying) and permanently (due to installation of solar arrays) during the construction period, but all woodland and hedgerows would be retained.

9.10.2.142 The impact is therefore predicted to be low. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.2.143 This would result in a short term, low magnitude impact to a receptor of low sensitivity (local value). The effect will therefore, be **minor adverse,** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.2.144 It is considered that the sensitivity of the receptor is **low** as the population of both brown hare and hedgehog in the area around the Project is considered to be of local conservation importance and has a moderate ability to recover**.**

Magnitude of impact

9.10.2.145 The nature of impacts during decommissioning on these species is likely to be similar to that during construction, with some temporary loss of habitats during the removal of solar arrays.

9.10.2.146 The magnitude of impact is therefore considered to be **low.**

Significance of effect

9.10.2.147 This would result in a short term, low magnitude impact to a receptor of low sensitivity (local value). The effect will therefore, be **minor adverse,** which is not significant in EIA terms.

9.10.3 The impact of habitat disturbance during construction, operation and maintenance and decommissioning

9.10.3.1 Construction, operation and maintenance and decommissioning of the Project may result in the disturbance of habitat (e.g. movement, noise, light spill, vibration), which may support protected or notable species. The maximum design scenario is represented by the maximum number of vehicle movements (including heavy machinery) and personnel that could cause the greatest impact and is summarised in **Table 9.1.13**.

Internationally Designated Sites

All phases

Sensitivity of the receptor

9.10.3.2 Internationally designated sites are considered to be those of the highest ecological value globally and have the highest level of protection within the UK. The nearest internationally designated site is the Oxford Meadows SAC 0.97km south east of the Project site.

9.10.3.3 The sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.3.4 The Project is 0.97km from the nearest internationally designated site. As a result of the magnitude of this distance and the intervening landscape (comprising various villages and major roads), the Project would not result in any direct or indirect disturbance during any of the construction, operation nor decommissioning phases within any internationally designated site within the ZoI.

9.10.3.5 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.3.6 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect during all phases of the Project will, therefore, be **no change**, which is not significant in EIA terms.

Nationally Designated Sites

Construction phase

Sensitivity of the receptor

9.10.3.7 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated sites to the Project site are the Strong Copse component of the Wytham Woods SSSI which is directly adjacent to the cable route corridor along the B4044 and Blenheim Park SSSI which is on the opposite side of the A4095 to the Project site boundary.

9.10.3.8 Such sites vary in their vulnerability to impacts and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats.

9.10.3.9 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.3.10 The Project would not result in any direct or indirect disturbance during construction within all nationally designated sites within the ZoI except Wytham Woods SSSI due to the distance between the Project site and these sites.

9.10.3.11 The trenching of cables within the existing carriageway along the B4044 when adjacent to Wytham Woods SSSI may cause some local noise disturbance to fauna interest features within the woodland. However, this would be short term (<1 year) and very localised.

9.10.3.12 Works near to Blenheim Park SSSI would comprise the creation of an enhancement area and hedgerow with panels set back from the A4095 road and screened by the new planting. There may be some local noise disturbance to fauna interest features within the SSSI during construction. However, this would be short term (<1 year) and very localised. The impact is therefore predicted to be negligible. The magnitude of impact is therefore, considered to be **negligible (Wytham Woods SSSI and Blenheim Park SSSI only).**

Significance of effect

9.10.3.13 The magnitude of the impact is deemed to be negligible (Wytham Woods SSSI only – all others would be no change) and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse (Wytham Woods SSSI only - all others would be no change)**, which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.14 Nationally designated sites are deemed to be of high value. The sensitivity of the receptor is therefore, considered to be **very high.**

Magnitude of impact

9.10.3.15 The Project would be largely autonomous once operational and maintenance requirements are minimal. The Project would not result in any direct or indirect disturbance during operation and maintenance within any nationally designated site within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.3.16 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.17 Nationally designated sites are deemed to be of high value. The sensitivity of the receptor is therefore, considered to be **very high.**

Magnitude of impact

9.10.3.18 The Project would not result in any direct or indirect disturbance during decommissioning within the majority of nationally designated sites within the ZoI due to the distance between the Project and such sites (they are all >0.5km from any part of the Project site). All cabling adjacent to the Wytham Woods SSSI will remain *in situ*. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

9.10.3.19 The only site that is located closer than this is Blenheim Park SSSI where they may be some local noise disturbance to fauna interest features within the woodland during the removal of panels from the fields on the far side of the A4095 to the SSSI. However, this would be short term (<1 year) and very localised. The magnitude of impact is therefore considered to be negligible on this SSSI only.

Significance of effect

9.10.3.20 For the majority of nationally designated sites (all except Blenheim Woods SSSI), the magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

9.10.3.21 The magnitude of the impact on Blenheim Woods SSSI is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Locally Designated Sites

Construction phase

Sensitivity of the receptor

9.10.3.22 The nearest locally designated sites to the Project site are Long Mead LWS and Swinford Farm Meadow LWS, both of which occur within the cable easement north of Wytham Woods. A number of other locally designated sites occur adjacent to the Project site boundary including Weavely Furze Firewood Allotments DWS, Samsons Green Lane DWS, Pinsley Wood, LWS, Burleigh Wood LWS, Bladon Heath LWS, City Farm LWS, Smith Hill Copse LWS and Denmans Copse proposed LWS.

9.10.3.23 All locally designated sites vary in their vulnerability to impact from disturbance and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats (some are designated for their ancient woodland).

9.10.3.24 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.3.25 The HDD of cables under the Long Mead LWS and Swinford Farm Meadow LWS would result in some short term disturbance from both noise and vibration as the HDD process takes place. There may be other short term noise disturbance impacts at the other locally designated sites that occur adjacent to the Project sited during construction (listed in 9.10.3.22) from, for example, installation of cables and panels.

9.10.3.26 The impact would therefore be predicted to be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact would affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **negligible.**

Significance of effect

9.10.3.27 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.28 As with construction, the sensitivity of the receptor is considered to be **very high** on a precautionary basis**.**

Magnitude of impact

9.10.3.29 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct

or indirect disturbance during operation and maintenance within any locally designated site within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.3.30 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.31 The sensitivity of the locally designated sites is considered to be **very high.**

Magnitude of impact

9.10.3.32 Similarly to the construction phase, there may be some short term disturbance impacts at some of the locally designated sites that occur near to the Project site during decommissioning from vehicle and plant movement.

9.10.3.33 The impact would therefore be predicted to be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact would affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **negligible.**

Significance of effect

9.10.3.34 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Ancient woodland

Construction phase

Sensitivity of the receptor

9.10.3.35 Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. Ancient woodland is deemed to be of high value and none or low recoverability.

9.10.3.36 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.3.37 The Project has been designed to avoid any areas of ancient woodland and all that occur adjacent to the Project site boundary would be protected by a minimum of 15 m buffer. There may be some short term disturbance of areas of ancient woodland that occur adjacent to the Project site boundary during construction (see Appendix 9.1 for locations of where Ancient Woodland occurs adjacent to the Project site).

9.10.3.38 The impact is predicted to be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact would affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **negligible.**

Significance of effect

9.10.3.39 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.40 As with construction, the sensitivity of the receptor is considered to be **very high.**

Magnitude of impact

9.10.3.41 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance within any ancient woodland within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.3.42 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.43 The sensitivity of the ancient woodland is considered to be **very high.**

Magnitude of impact

9.10.3.44 Similarly to the construction phase of the Project, there may be some short term disturbance impacts at some of the ancient woodland that occur near to the Project site during decommissioning from vehicle and plant movement.

9.10.3.45 The impact would therefore be predicted to be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact would affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **negligible.**

Significance of effect

9.10.3.46 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Broadleaved woodland HPI

Construction phase

Sensitivity of the receptor

9.10.3.47 Areas of non-ancient broadleaved woodland HPI have been excluded from within the Project site boundary although do occur adjacent to it. Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats.

9.10.3.48 As such, the sensitivity of the receptor is therefore **medium**.

Magnitude of impact

9.10.3.49 The Project has been designed to avoid any areas of broadleaved woodland and all that occur adjacent to the project boundary will be protected by a minimum of a 5 m buffer, as set out in **Table 9.1.14** above. Installation of any cables where these are necessary adjacent to woodland would be completed following the principles set out in the Strategic Arboriculture Impact and Method Statement (see Volume 3, Appendix 8.3) to ensure no impact to any trees. There could, however, be short term disturbance from noise and vibration during construction.

9.10.3.50 The disturbance impact is predicted to be short term (less than one year) and there would be no long term disturbance. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.51 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.52 As with construction, the sensitivity of the receptor is considered to be **medium.**

Magnitude of impact

9.10.3.53 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance within any

woodland within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.3.54 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.55 The sensitivity of the woodland HPI is considered to be **medium.**

Magnitude of impact

9.10.3.56 As with construction, there could, be short term disturbance from noise and vibration during decommissioning.

9.10.3.57 The disturbance impact is predicted to be short term (less than one year) and there would be no long term disturbance. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.58 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Floodplain Meadow HPI

Construction phase

Sensitivity of the receptor

9.10.3.59 Areas of floodplain meadow HPI occur within the Project site adjacent to the River Evenlode (Figure 3.2a of Appendix 9.1: Desk Study).

9.10.3.60 As such, the sensitivity of the receptor is therefore **medium**.

Magnitude of impact

9.10.3.61 The Project has been designed to avoid areas of floodplain meadow. There could, however, be short term disturbance from noise and vibration during construction.

9.10.3.62 The disturbance impact is predicted to be short term (less than one year) and there will be no long term disturbance. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.63 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.64 As with construction, the sensitivity of the receptor is considered to be **medium.**

Magnitude of impact

9.10.3.65 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance within any floodplain meadow HPI within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.3.66 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.67 The sensitivity of the floodplain meadow HPI is considered to be **medium.**

Magnitude of impact

9.10.3.68 As with construction, there could, be short term disturbance from noise and vibration during decommissioning.

9.10.3.69 The disturbance impact is predicted to be short term (less than one year) and there would be no long term disturbance. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.70 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Waterbodies (including ponds and watercourses HPIs)

Construction phase

Sensitivity of the receptor

9.10.3.71 Waterbodies, including ponds, ditches, streams and rivers, have a high conservation importance, high vulnerability to pollution incidents, a potential to support protected species and have low recoverability.

9.10.3.72 As such, the sensitivity of these receptors is therefore **high**.

Magnitude of impact

9.10.3.73 Any waterbody that occurs within the Project site or adjacent to it will be protected by a minimum of a 5 m (ponds) and 8 m buffer (watercourses), as set out in **Table 9.1.14** above. Installation of any cables that cross such features would be via HDD.

9.10.3.74 There may be some temporary noise and vibration disturbance of such habitats, during HDD activities, for example.

9.10.3.75 The disturbance impact is predicted to be short term (less than one year) and riparian habitats would not be impacted in the long term. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.76 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance

Sensitivity of the receptor

9.10.3.77 As with construction, the sensitivity of waterbodies is considered to be **high.**

Magnitude of impact

9.10.3.78 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance within any waterbody within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.79 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.80 The sensitivity of the waterbodies HPIs is considered to be **high.**

Magnitude of impact

9.10.3.81 During decommissioning the cable routes that cross watercourses would remain in place and therefore, disturbance of habitats is unlikely to occur.

9.10.3.82 There is the potential for temporary noise and vibration disturbance of riparian habitats as panels and other infrastructure are decommissioned.

9.10.3.83 The disturbance impact is predicted to be short term (less than one year) and riparian habitats would not be impacted in the long term. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.84 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Hedgerows HPI

Construction phase

Sensitivity of the receptor

9.10.3.85 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to establish following a planting and management regime.

9.10.3.86 As such, the sensitivity of these receptors is therefore **medium**.

Magnitude of impact

9.10.3.87 The Project has been designed to retain all hedgerow within the Project site boundary with all cable routes to be via existing field accesses or buried within existing carriageways, where practicable. A 5 m buffer will be maintained around all field boundary hedgerows to ensure their protection during construction, as set out in **Table 9.1.14** above.

9.10.3.88 There may be indirect noise and vibration disturbance of hedgerows during construction activities. Such disturbance impacts are predicted to be short term (less than one year) and there would be no long term disturbance.

9.10.3.89 The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.90 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance

Sensitivity of the receptor

9.10.3.91 As with construction, the sensitivity of hedgerows is considered to be **medium.**

Magnitude of impact

9.10.3.92 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance within any hedgerows within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.93 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be high. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.94 The sensitivity of the hedgerow HPI is considered to be **medium.**

Magnitude of impact

9.10.3.95 The decommissioning of the Project could result in similar short term disturbance to that which could occur during construction. The disturbance impact is predicted to be short term (less than one year) and there would be no long term disturbance. The magnitude of impact is therefore considered to be **negligible**.

Significance of effect

9.10.3.96 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Breeding bird assemblage

Construction phase

Sensitivity of the receptor

9.10.3.97 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.10.3.98 There would be a temporary disturbance of habitat used by breeding birds during construction from noise, vibration and light within the Project site. This has the potential to disturb bird populations using the Project site.

9.10.3.99 The disturbance impact is predicted to be short term (less than one year) with habitats not impacted by disturbance in the long term. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.3.100 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operations and maintenance

Sensitivity of the receptor

9.10.3.101 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance**.**

Magnitude of impact

9.10.3.102 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance within any breeding bird habitat within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.103 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.104 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance**.**

Magnitude of impact

9.10.3.105 There would be a temporary disturbance of breeding bird habitat during decommissioning from both noise and vibration within the Project site, which has the potential to cause disturbance to breeding bird populations. However,

such disturbance is likely to be less than during construction as it would not involve piling.

9.10.3.106 The disturbance impact is predicted to be short term (less than one year) and the habitats would not be impacted by disturbance in the long term. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.107 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **negligible** significance which is not significant in EIA terms.

Wintering bird assemblage

Construction phase

Sensitivity of the receptor

9.10.3.108 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.10.3.109 There would be a temporary disturbance of habitat used by wintering birds during construction from noise and vibration and light from within the Project site. This has the potential to disturb bird populations using the Project site.

9.10.3.110 The disturbance impact is predicted to be short term (less than one year) with habitats not impacted by disturbance in the long term. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.3.111 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.112 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance**.**

Magnitude of impact

9.10.3.113 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct

or indirect disturbance during operation and maintenance within any wintering birds within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.114 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.115 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.10.3.116 There would be a temporary disturbance of habitat during decommissioning from both noise and vibration from within the Project site, which has the potential to cause disturbance to wintering bird populations. However, such disturbance is likely to be less than during construction as it would not involve piling.

9.10.3.117 The disturbance impact is predicted to be short term (less than one year) and the habitats would not be impacted by disturbance in the long term. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.118 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **negligible** significance which is not significant in EIA terms.

Great crested newt

Construction phase

Sensitivity of the receptor

9.10.3.119 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conservation importance and has medium ability to recover.

Magnitude of impact

9.10.3.120 There would be a temporary disturbance of terrestrial habitat and aquatic habitats during construction from both noise and vibration and light from within the Project site, which has the potential to cause disturbance to GCN populations.

9.10.3.121 The disturbance impact is predicted to be short term (less than one year) and the terrestrial and aquatic habitats will not be impacted by disturbance in the long term. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.3.122 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.123 The sensitivity of GCN is considered to be **medium.**

Magnitude of impact

9.10.3.124 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance of any GCN population within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.125 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.126 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conservation importance and has medium ability to recover**.**

Magnitude of impact

9.10.3.127 There would be a temporary disturbance of terrestrial habitat and aquatic habitats during decommissioning from both noise and vibration within the Project site, which has the potential to cause disturbance to GCN populations. However, such disturbance is likely to be less than during construction as it would not involve piling.

9.10.3.128 The disturbance impact is predicted to be short term (less than one year) and the terrestrial and aquatic habitats would not be impacted by disturbance in the long term. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.129 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **negligible** significance which is not significant in EIA terms.

Badger

Construction phase

Sensitivity of the receptor

9.10.3.130 It is considered that the sensitivity of the receptor is **low** as badger is of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.10.3.131 Badger activity was spread across the majority of the Project site (Appendix 9.7: Badger Survey). All of the setts identified were present either within the hedgerow network on site or in small parcels of woodland within the Project site or in larger blocks external to it. All woodland/hedgerows will be protected during construction with at least 5m buffers and appropriate fencing as set out in **Table 9.1.14** above. As such, it is not anticipated that any sett would need to be permanently closed. However, it may be necessary to temporarily close a sett for the duration of construction activities, depending on the distance the sett is from the solar arrays. Such construction activities may cause temporary noise and vibration disturbance of setts.

9.10.3.132 Works would be completed under an appropriate licence from Natural England and would include suitable mitigation, such as the provision of artificial setts, should that be necessary.

9.10.3.133 The magnitude of impact is therefore considered to be **low.**

Significance of effect

9.10.3.134 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be low. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.135 The sensitivity of badger is considered to be **low.**

Magnitude of impact

9.10.3.136 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project would therefore not result in any direct or indirect disturbance during operation and maintenance of any badger population within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.137 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be low. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.138 It is considered that the sensitivity of the receptor is **low** as badger is of low conservation importance and has high ability to recover**.**

Magnitude of impact

9.10.3.139 The nature of impacts during decommissioning on badger is likely to be similar to that during construction, with some temporary disturbance of setts. This will be determined by surveys undertaken pre decommissioning to ensure an update of the baseline with respect to badger location on site. However, such disturbance is likely to be less than that experienced during construction as there would not be any piling.

9.10.3.140 Any closure necessary would be completed under an appropriate licence from Natural England and would include suitable mitigation, such as the provision of artificial setts, should that be necessary.

9.10.3.141 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.10.3.142 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be low. The effect will, therefore, be of **negligible** significance which is not significant in EIA terms.

Bat species assemblage

Construction phase

Sensitivity of the receptor

9.10.3.143 It is considered that the sensitivity of the receptor is **medium** as the population of bats in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.3.144 All landscape features (eg hedgerows, woodlands and watercourses) that could be used by foraging, commuting and roosting bats would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.1.14**). A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how

hedgerows and other features that could be used by bats will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by bats.

9.10.3.145 It is possible that other short term disturbance of commuting/foraging bats could take place due to noise and vibration during construction activities; however, this would be minimised through the implementation of appropriate buffers to all features that could be used by bats.

9.10.3.146 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.10.3.147 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.10.3.148 The sensitivity of the bat assemblage is considered to be **medium.**

Magnitude of impact

9.10.3.149 The Project is largely autonomous once operational and maintenance requirements are minimal. Lighting would only be the minimum required around electrical compounds for security purposes, with all such lighting being passive infra-red (PIR) motion sensor activated. The Project would therefore not result in any direct or indirect disturbance from noise or lighting during operation and maintenance of any bat population within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.150 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.151 It is considered that the sensitivity of the receptor is **medium** as the population of bats in the area around the Project is considered to be of county level conservation importance and has a relatively low ability to recover**.**

Magnitude of impact

9.10.3.152 The nature of impacts during decommissioning on the bat assemblage is likely to be similar to that during construction, with some temporary

disturbance due to decommissioning activities. However, such disturbance is likely to be less than that experienced during construction as there would not be any piling.

9.10.3.153 All landscape features that could be used by foraging, commuting and roosting bats would be retained as part of the design of the Project and protected with appropriate buffers and fencing during decommissioning. A decommissioning lighting plan will be detailed within an appropriate lighting strategy, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by bats will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by bats.

9.10.3.154 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.10.3.155 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Terrestrial invertebrate assemblage

Construction phase

Sensitivity of the receptor

9.10.3.156 It is considered that the sensitivity of the receptor is **low** as the invertebrate assemblage of the Project site is considered to be of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.10.3.157 It is possible that other short term disturbance of invertebrates could take place due to noise/vibration during construction activities; however, this would be minimised through the implementation of appropriate buffers to all features that could be used by invertebrates.

9.10.3.158 The magnitude of impact is therefore considered to be **negligible**.

Significance of effect

9.10.3.159 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Operations and maintenance

Sensitivity of the receptor

9.10.3.160 The sensitivity of the invertebrate assemblage is considered to be **low.**

Magnitude of impact

9.10.3.161 The Project is largely autonomous once operational and maintenance requirements are minimal. Lighting would only be the minimum required around electrical compounds for security purposes, with all such lighting being PIR motion sensor activated. The Project would therefore not result in any direct or indirect disturbance from noise or lighting during operation and maintenance of any invertebrate population within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.162 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be low. The effect will, therefore, be **no change** which is not significant in EIA terms

Decommissioning

Sensitivity of the receptor

9.10.3.163 It is considered that the sensitivity of the receptor is **low** as the invertebrate assemblage of the Project site is considered to be of local conservation importance and has a relatively high ability to recover**.**

Magnitude of impact

9.10.3.164 The nature of impacts during decommissioning on invertebrates is likely to be similar to that during construction, with all features that could be used by invertebrates retained and protected with appropriate fencing.

9.10.3.165 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.10.3.166 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be low. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Dormouse

Construction phase

Sensitivity of the receptor

9.10.3.167 Although no specific surveys have been undertaken for dormouse, they are considered likely to occur within the hedgerow network on site and the surrounding woodland. It is considered that the sensitivity of the receptor is **medium** as the population of dormouse in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.3.168 All landscape features that could be used by foraging, commuting and nesting dormice (ie woodland and hedgerows) would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.1.14** above). A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by dormice will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by dormice.

9.10.3.169 It is possible that other short term disturbance of dormice could take place due to noise and vibration during construction activities; however, this would be minimised through the implementation of appropriate buffers to all features that could be used by this species.

9.10.3.170 The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.171 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Operations and maintenance

Sensitivity of the receptor

9.10.3.172 The sensitivity of the dormouse population is considered to be **medium.**

Magnitude of impact

9.10.3.173 The Project is largely autonomous once operational and maintenance requirements are minimal. Lighting would only be the minimum required around electrical compounds for security purposes, with all such lighting being PIR motion sensor activated. The Project would therefore not result in any direct or indirect disturbance from noise or lighting during operation and maintenance of any dormouse population within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.174 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.175 It is considered that the sensitivity of the receptor is **medium** as the population of dormouse in the area around the Project is considered to be of county level conservation importance and has a relatively low ability to recover**.**

Magnitude of impact

9.10.3.176 The nature of impacts during decommissioning on dormouse is likely to be similar to that during construction, with all features that could be used by this species retained and protected with appropriate buffers and fencing, likely to be similar to those used in construction.

9.10.3.177 All landscape features that could be used by this species would be retained as part of the design of the Project and protected with appropriate buffers and fencing during decommissioning. A decommissioning lighting plan will be detailed within an appropriate lighting strategy to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines that will set out how hedgerows and other features that could be used by dormouse will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by dormice.

9.10.3.178 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.10.3.179 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Otter

Construction phase

Sensitivity of the receptor

9.10.3.180 Although no specific surveys have been undertaken for otter, they are known to occur along the River Evenlode and, as such, are likely to use the Project site for commuting and foraging. There may also be holts located along the river where it passes within the Project site.

9.10.3.181 It is considered that the sensitivity of the receptor is **medium** as the population of otter in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.3.182 All landscape features that could be used by foraging, commuting, breeding and resting otter would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction.

9.10.3.183 A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows, watercourses and other features that could be used by otter will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by otter.

9.10.3.184 It is possible that other short term disturbance of otter could take place due to noise and vibration during construction activities; however, this would be short term and minimised through the implementation of appropriate buffers to all features that could be used by this species.

9.10.3.185 The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.10.3.186 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Operations and maintenance

Sensitivity of the receptor

9.10.3.187 The sensitivity of the otter population is considered to be **medium.**

Magnitude of impact

9.10.3.188 The Project is largely autonomous once operational and maintenance requirements are minimal. Lighting would only be the minimum required around electrical compounds for security purposes, with all such lighting being PIR motion sensor activated. The Project would therefore not result in any direct or indirect disturbance from noise or lighting during operation and maintenance to any otter population within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.189 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.190 It is considered that the sensitivity of the receptor is **medium** as the population of otter in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover**.**

Magnitude of impact

9.10.3.191 The nature of impacts during decommissioning on otter is likely to be similar to that during construction, with all features that could be used by this species retained and protected with appropriate fencing.

9.10.3.192 All landscape features that could be used by this species would be retained as part of the design of the Project and protected with appropriate buffers and fencing during decommissioning. A decommissioning lighting plan will be detailed within an appropriate lighting strategy to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by otter will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by otter.

9.10.3.193 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.10.3.194 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Brown hare and hedgehog

Construction phase

Sensitivity of the receptor

9.10.3.195 Although no specific surveys have been undertaken for either species, they are known to occur on site with incidental recordings of brown hare occurring from across the Project site.

9.10.3.196 It is considered that the sensitivity of the receptor is **low** as the population of both species in the area around the Project is considered to be of local conservation importance, based on these species level of protection, and both have a moderate ability to recover.

Magnitude of impact

9.10.3.197 A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by these species will be protected from light spill. Any task-specific lighting necessary

during construction will be directional away from features that could be used by this receptor.

9.10.3.198 It is possible that other short term disturbance of this receptor could take place due to noise and vibration during construction activities; however, this would be short term for the duration of construction within a specific field.

9.10.3.199 The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.10.3.200 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be low. The effect will therefore be **negligible** which is not significant in EIA terms.

Operations and maintenance

Sensitivity of the receptor

9.10.3.201 The sensitivity of the brown hare and hedgehog populations is considered to be **low.**

Magnitude of impact

9.10.3.202 The Project is largely autonomous once operational and maintenance requirements are minimal. Lighting would only be the minimum required around electrical compounds for security purposes, with all such lighting being PIR motion sensor activated. The Project would therefore not result in any direct or indirect disturbance from noise or lighting during operation and maintenance of any brown hare or hedgehog population within the ZoI. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.10.3.203 The magnitude of impact is deemed to be no change and the sensitivity of receptor is considered to be low. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.10.3.204 It is considered that the sensitivity of the receptor is **low** as the population of both brown hare and hedgehog in the area around the Project site is considered to be of local conservation importance and has a moderate ability to recover**.**

Magnitude of impact

9.10.3.205 The nature of impacts during decommissioning on these species is likely to be similar to that during construction, with all features that could be used by this species retained and protected with appropriate fencing.

9.10.3.206 All landscape features that could be used by this species would be retained as part of the design of the Project and protected with appropriate buffers and fencing during decommissioning. A decommissioning lighting plan will be detailed within an appropriate lighting strategy to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by these species will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by brown hare and hedgehog.

9.10.3.207 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.10.3.208 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be low. The effect will, therefore, be **negligible** which is not significant in EIA terms.

9.10.4 The impact of pollution caused by accidental spills/contaminant release during construction and decommissioning

9.10.4.1 Activities required for the construction and decommissioning of the Project may result in accidental spills/contaminant release (for example from storage of fuels/chemicals in the temporary construction compounds, bentonite breakouts from HDD crossings and surface water runoff) which could adversely affect protected or notable habitats and species. Such pollution would result in changes to water quality and resultant impacts to habitats.

All receptors in Table 9.1.11

Construction

Sensitivity of receptors

9.10.4.2 The receptors in **Table 9.1.11** have a low to very high conservation importance, up to very high vulnerability to impacts and a medium to low/non recoverability. The sensitivity of the receptors is therefore, considered to be **low** to **very high**.

Magnitude of impact

9.10.4.3 Although the likelihood of a pollution event occurring is low, should an event occur, the impact is predicted to be of local spatial extent, short duration, intermittent and reversible, given the measures adopted to prevent such impacts occurring as detailed in **Table 9.1.14**.

9.10.4.4 Such measures will be set out within the CoCP and secured via an appropriate Requirement within the DCO. These measures are standard and good practice within the construction industry. There is therefore a high confidence in their efficacy.

9.10.4.5 The magnitude is therefore considered to be **no change**.

Significance of the effect

9.10.4.6 The magnitude of impact is deemed to be no change and the sensitivity of the receptors in **Table 9.1.11** is considered to be low to very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of receptors

9.10.4.7 The receptors in **Table 9.1.11** have a low to very high conservation importance, up to very high vulnerability to impacts and a medium to low/non recoverability. The sensitivity of the receptor is therefore, considered to be **low** to **very high**.

Magnitude of impact

9.10.4.8 Decommissioning activities within the Project site are equal to or less than those carried out during the construction phase and would be controlled in a similar manner. Therefore, for the purpose of this assessment it is assumed that the impact of pollution caused by accidental spills/contaminant release is likely to be similar.

9.10.4.9 The magnitude is therefore considered to be **no change**.

Significance of the effect

9.10.4.10 The magnitude of impact is deemed to be no change and the sensitivity of the receptors in **Table 9.1.11** is considered to be low to very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

9.10.5 The impact of changes in air quality caused by dust release during construction and decommissioning

9.10.5.1 Construction and decommissioning of the Project may result in the release of dust during construction activities during earth movements, plant tracking and piling, for example. Dust spreading has the potential to smother habitats and damage ecological functioning.

All receptors in Table 9.1.11

Construction

Sensitivity of receptors

9.10.5.2 The receptors in **Table 9.1.11** have a low to very high conservation importance, up to very high vulnerability to impacts and a medium to low/non recoverability. The sensitivity of the receptors is therefore, considered to be **low** to **very high.**.

Magnitude of impact

9.10.5.3 An assessment of risk of dust generation impacts has been completed in Volume 3, Appendix 4.5: Air Quality report. This demonstrates that, in the absence of mitigation, there is a risk of impacts due to dust on sensitive receptors near to the Project site. It provides details of appropriate mitigation to avoid such impacts occurring (Table 1.17, Appendix 4.5: Air Quality report), including the production of a Dust Management Plan. This will be included within the CoCP for the Project and be secured as part of the Requirement for the CoCP within the DCO. Such measures are standard best practice within the construction industry and there is therefore a high degree of confidence in their efficacy.

9.10.5.4 Once the implementation of the Dust Management Plan is accounted for, the magnitude of impact is considered to be **no change**.

Significance of the effect

9.10.5.5 The magnitude of impact is deemed to be no change and the sensitivity of the receptors in **Table 9.1.11** is considered to be low to very high. The effect will, therefore, be **o change**, which is not significant in EIA terms.

Decommissioning

Sensitivity of receptors

9.10.5.6 The receptors in **Table 9.1.11** have a low to very high conservation importance, up to very high vulnerability to impacts and a medium to low/non recoverability. The sensitivity of the receptors is therefore, considered to be **low** to **very high**.

Magnitude of impact

9.10.5.7 Decommissioning activities within the Project are equal to or less than those carried out during the construction phase and would be controlled in a similar manner. Therefore, for the purpose of this assessment it is assumed that the risk of dust generation caused by decommissioning activities is likely to be similar.

9.10.5.8 The magnitude is therefore considered to be **no change**.

Significance of the effect

9.10.5.9 The magnitude of impact is deemed to be negligible and the sensitivity of the receptors in **Table 9.1.11** is considered to be low to very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

9.10.6 The impact of vehicle emissions on habitats and species during construction and decommissioning

9.10.6.1 Changes in air quality from vehicle emissions could result in impacts to habitats and species from gaseous nitrogen oxides and ammonia and from the deposition of nutrient nitrogen. The former gases can cause directly toxic

effects to plants while the latter deposition can change the nutrient status of habitats, allowing nitrophilous species to out compete other plants with resulting changes to habitat type.

All receptors in Table 9.1.11

Construction

Magnitude of impact

9.10.6.2 An assessment of the change in the flows of HGVs arising as a result of the Project near to the site during construction has been undertaken (see Volume 3, Appendix 12.1: Description of network links and sensitivity). This shows that the change in HGV Average Annual Daily Traffic flows on road links around the Project will be 66 vehicles. This is not sufficient to trigger the requirement for any further air quality modelling; the threshold for such an assessment is a change in Average Annual Daily Traffic of 100 HGV movements (Highways England 2020).

9.10.6.3 As such, the magnitude of impact is considered to be **no change**.

Sensitivity of receptors

9.10.6.4 The receptors in **Table 9.1.11** have a low to very high conservation importance, up to very high vulnerability to impacts and a medium to low/non recoverability. The sensitivity of the receptors is therefore, considered to be **low** to **very high**.

Significance of the effect

9.10.6.5 The magnitude of impact is deemed to be no change and the sensitivity of the receptor is considered to be low to very high. The effect will, therefore, be **no change** which is not significant in EIA terms.

Decommissioning

Magnitude of impact

9.10.6.6 Traffic flows during decommissioning have not been modelled at this stage. However, they are likely to be similar to those during construction.

9.10.6.7 As such, the magnitude of impact is considered to be **no change**.

Sensitivity of receptors

9.10.6.8 The receptors have a low to very high conservation importance, up to very high vulnerability to impacts and a medium to low/non recoverability. The sensitivity of the receptor is therefore, considered to be **low** to **very high**.

Significance of the effect

9.10.6.9 The magnitude of impact is deemed to be no change and the sensitivity of the receptor is considered to be low to very high. The effect will, therefore, be no change which is not significant in EIA terms.

9.10.7 The impact of spreading Invasive and Non-native Species (INNS) during construction and decommissioning

9.10.7.1 Construction and decommissioning of the Project may cause the spread of INNS, which could adversely affect the status of protected or notable habitats and species. The maximum design scenario is represented by the greatest amount of land that will be disturbed and is summarised in **Table 9.1.13**.

9.10.7.2 Construction and decommissioning activities potentially involve the introduction and/or spread of INNS through the movement of earth during works, including the digging of trenches and the use of machinery and presence of operating personnel. Both machinery and operating personnel have the potential to carry on their equipment (e.g., heavy machinery tracks or vehicle tyres or working clothing, e.g., boots, seeds, or spores of invasive and non-native species from either within or outside the Project site).

9.10.7.3 The introduction, or unintentional spread of seeds, spores or other parts of plant material may result in the spread of plant species (e.g., Himalayan balsam *Impatiens glandulifera*, giant hogweed *Heracleum mantegazzianum* and water primrose *Ludwigia peploides*). These species have the potential to displace native species and to replace or become dominant in those areas of habitat and change the community composition and structure.

9.10.7.4 If wide scale habitat changes results from the spread of invasive and/or non-native species there is the potential to replace existing valuable habitat and supporting ecosystems that are used by protected or notable species.

9.10.7.5 At this stage, no INNS have been identified on the Project site. However, the potential impacts from their spread, should they be present, is considered below.

All receptors in Table 9.1.11

Construction

Sensitivity of receptor

9.10.7.6 The receptors set out in **Table 9.1.11** have a low to high conservation importance, high vulnerability to impact and a medium to low/non recoverability. The sensitivity of the receptors is therefore, considered to be **low** to **very high**.

Magnitude of impact

9.10.7.7 The majority of the Project site would be dominated by grassland of varying types during construction. These habitats are not likely to be sensitive to large-scale change due to the spread of INNS

9.10.7.8 Water courses or bodies are more susceptible to the spread of invasive or non-native species, including curly waterweed *Lagarosiphon major* and floating pennywort *Hydrocotyle ranunculoides*, including along the River Evenlode.

9.10.7.9 No INNS have been identified on the Project site to date. Notwithstanding this, a method statement for the prevention of their spread and their control, should any be found during pre-commencement surveys, will be included within the CoCP.

9.10.7.10 As such, at this stage, the magnitude of impact is considered to be **no change**.

Significance of the effect

9.10.7.11 The magnitude of the impact during construction is deemed to be no change and the sensitivity of the receptors is considered to be low to very high, depending on the species/habitat. The effect will, therefore, be **no change**, which is not significant in EIA terms.

Decommissioning

9.10.7.12 Decommissioning activities within the Project site are equal to or less than those carried out during the construction phase. Therefore, for the purpose of this assessment it is assumed that the level of ground disturbance and thus potential to spread INNS is likely to be similar and the potential impact on each species is deemed to be reversible in the short term.

9.10.7.13 Given there are no INNS recorded on site to date, the magnitude of impact is considered to be **no change**.

Significance of the effect

9.10.7.14 The magnitude of the impact during decommissioning is deemed to be no change and the sensitivity of the receptor is considered to be low to very high, depending on the species/habitat. The effect will, therefore, be **no change** which is not significant in EIA terms.

9.10.8 The impact of habitat creation (all phases)

9.10.8.1 The Project has been designed to ensure that it delivers significant new habitat creation, delivering biodiversity benefit at the landscape scale. The location of features and their design has been informed by the draft Oxfordshire Nature Recovery Network (Wild Oxford, 2020) to ensure that the Project complements the strategic biodiversity goals for Oxfordshire.

9.10.8.2 The Environment Act 2021 includes provisions applying certain BNG requirements to the nationally significant infrastructure projects regime. A BNG requirement is proposed to be imposed on nationally significant

infrastructure projects from November 2025[1], with the level of requirement detailed within a BNG statement(s) (subject to prior publication – currently expected to be January 2024, to allow a period of transition) and presently expected to be set at a minimum of 10%. The Government consultation on implementation of BNG indicated that projects which have been accepted for examination prior to November 2025 would not be required to deliver that minimum BNG target, but could choose to do so voluntarily. In this context, whilst due to the timescale for Application there is currently not anticipated to be a legal requirement under the Environment Act 2021 for the Project to deliver BNG, the Project design has been developed such that the extent of net gain possible has been maximised, with a target gain of at least **70% BNG**.

9.10.8.3 The Illustrative Masterplan for the Project (Volume 2, Figure 2.1, 2.2 and 2.3) shows a layout for the Project that will help to achieve this (the final design will be determined post consent). It is intended that the following features will be carried through into the final design. It includes the following key features:

- A habitat enhancement corridor along the River Evenlode that will be designed in consultation with stakeholders but is likely to include significant new floodplain meadow HPI and other wetland features. This would help improve connectivity along this important commuting route between the woodland at Blenheim Palace and Wytham Woods;
- Wildflower meadow within parts of the Project site, as appropriate;
- Buffers around all hedgerows, woodlands and watercourses that will be allowed to develop tussocky structures to ensure ecotone transitions between the feature and the grassland fields of the panel arrays;
- New woodland planting in strategic locations (circa 5.03ha); and
- New hedgerow planting in strategic locations to link existing woodland (circa 29km of new hedgerow) and the reinforcing of existing hedgerows (circa 28km).

9.10.8.4 These features would be installed during the construction phase and their benefits would accrue throughout the operational phase of the development. As such, the effects are considered below with respect to the lifetime of the Project, rather than a specific phase.

Internationally Designated Sites

Sensitivity of the receptor

9.10.8.5 Internationally designated sites are considered to be those of the highest ecological value globally and have the highest level of protection within the UK. The nearest internationally designated site is the Oxford Meadows SAC 0.97km south east of the Project.

[1] The Consultation on Biodiversity Net Gain Regulations and Implementation; Consultation outcome Government response and summary of responses. Updated 21 February 2023 (defra.gov.uk).

9.10.8.6 The sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.8.7 The Project is 0.97km from the nearest internationally designated site. As a result of this distance, habitat creation within the Project would not result in any measurable change within any internationally designated site within the ZoI. The habitat to be created is not close enough to provide a meaningful benefit to these sites.

9.10.8.8 The impact is therefore predicted to be no change. The magnitude of impact is therefore, considered to be **no change.**

Significance of effect

9.10.8.9 The magnitude of the impact is deemed to be no change and the sensitivity of the receptor is considered to be very high. The effect during all phases of the Project will, therefore, be **no change**, which is not significant in EIA terms.

Nationally Designated Sites

Sensitivity of the receptor

9.10.8.10 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated sites to the Project site are the Strong Copse component of the Wytham Woods SSSI which is directly adjacent to the cable route corridor along the B4044 and Blenheim Park SSSI which is on the opposite side of the A4095 to the Project site boundary.

9.10.8.11 Such sites vary in their vulnerability to impacts and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats.

9.10.8.12 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.8.13 The creation of new habitat forming a strategic link along the River Evenlode between the Blenheim Park SSSI and Wytham Woods SSSI would increase the ecological resilience of the fauna populations that are interest features of these sites, facilitating movement between the two sites for foraging and nesting purposes. This impact would be long term and beneficial.

9.10.8.14 The impact is therefore predicted to be low. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.8.15 The magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **moderate beneficial**, which is significant in EIA terms.

Locally Designated Sites

Sensitivity of the receptor

9.10.8.16 Locally designated sites are those considered to be of importance within the context of the county of Oxfordshire. The nearest locally designated sites to the Project are Long Mead LWS and Swinford Farm Meadow LWS, both of which occur within the cable easement north of Wytham Woods. A number of other locally designated sites occur adjacent to the Project site boundary, including Weavely Furze Firewood Allotments DWS, Samsons Green Lane DWS, Pinsley Wood, LWS, Burleigh Wood LWS, Bladon Heath LWS, City Farm LWS, Smith Hill Copse LWS and Denmans Copse proposed LWS.

9.10.8.17 Such sites vary in their vulnerability to impact from disturbance and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats (some are designated for their ancient woodland).

9.10.8.18 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.8.19 The new habitat creation associated with the Project would improve ecological connectivity between locally designated sites and the wider landscape, especially Burleigh Wood LWS as this is located adjacent to the River Evenlode corridor. This impact would be long term and beneficial.

9.10.8.20 The impact is therefore predicted to be low. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.8.21 The magnitude of the impact is deemed to be low and the sensitivity of locally-designated sites is considered to be very high. The effect will, therefore, be **moderate beneficial**, which is significant in EIA terms.

Ancient woodland

Sensitivity of the receptor

9.10.8.22 Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. Ancient woodland is deemed to be of high value and none or low recoverability.

9.10.8.23 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.10.8.24 The habitat creation associated with the Project would improve the connectivity between the blocks of ancient woodland around the Project site, helping to increase resilience of the woodland and the species it supports.

9.10.8.25 The impact would be of local spatial extent and long term duration. It is predicted that the impact would affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **low.**

Significance of effect

9.10.8.26 The magnitude of the impact is deemed to be low and the sensitivity of ancient woodland is considered to be very high. The effect will, therefore, be **moderate beneficial**, which is significant in EIA terms.

Broadleaved woodland HPI

Sensitivity of the receptor

9.10.8.27 Areas of non-ancient broadleaved woodland HPI have largely been excluded from within the Project site boundary but do occur adjacent to it. Mature broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats.

9.10.8.28 As such, the sensitivity of the receptor is therefore **medium**.

Magnitude of impact

9.10.8.29 The Project has been designed to include new woodland planting (circa 5ha) both as screening for visual purposes and to provide ecology nodes within the landscape, increasing the area of woodland within the Project site boundary by circa 50%.

9.10.8.30 This impact will be long term and beneficial.

9.10.8.31 The impact is therefore predicted to be low. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.8.32 The magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor beneficial**, which is not significant in EIA terms.

Floodplain Meadow HPI

Sensitivity of the receptor

9.10.8.33 Floodplain meadow HPI is shown as occurring within the Project site on Natural England's Habitat Inventory. It comprises areas of generally species-rich grassland that are periodically inundated by a local water course.

9.10.8.34 As such, the sensitivity of the receptor is therefore **medium**.

Magnitude of impact

9.10.8.35 The creation of new floodplain meadow HPI would form a key component of the River Evenlode enhancement corridor. This impact would therefore be long term and beneficial.

9.10.8.36 The impact is therefore predicted to be low. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.8.37 The magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor beneficial**, which is not significant in EIA terms.

Waterbodies (including ponds and watercourses HPIs)

Sensitivity of the receptor

9.10.8.38 Waterbodies, including ponds, ditches, streams and rivers, have a high conservation importance, high vulnerability to pollution incidents, a potential to support protected species and have low recoverability.

9.10.8.39 As such, the sensitivity of these receptors is therefore **high**.

Magnitude of impact

9.10.8.40 Although no new water courses are being created as part of the Project, the removal of the fields adjacent to the River Evenlode from agricultural use and the creation of new grassland without agricultural inputs would indirectly improve the water quality of the water courses in the area through the cessation of inputs of agricultural runoff (fertiliser, etc.).

9.10.8.41 The impact is predicted to be long term. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.10.8.42 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be high. The effect will, therefore, be **moderate beneficial** which is significant in EIA terms.

Hedgerows HPI

Sensitivity of the receptor

9.10.8.43 Hedgerows provide important connectivity for a species such as hazel dormice and bats.

9.10.8.44 As such, the sensitivity of these receptors is therefore **medium**.

Magnitude of impact

9.10.8.45 The Project has been designed to include significant new hedgerow planting (circa 29km). In addition, significant existing hedgerow lengths would be reinforced (an additional circa 28km). This is a long term beneficial impact.

9.10.8.46 The magnitude of impact is therefore, considered to be **medium.**

Significance of effect

9.10.8.47 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **moderate beneficial** which is significant in EIA terms.

Breeding bird assemblage

Sensitivity of the receptor

9.10.8.48 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of medium (county) importance. As such, the sensitivity of these receptors is therefore **medium**.

Magnitude of impact

9.10.8.49 The Project will include new habitat creation that will benefit a range of breeding bird species that use the site. The combination of new species-rich grasslands, enhanced floodplain meadow along the River Evenlode and significant new hedgerow and woodland planting will provide a more diverse variety of habitats post development.

9.10.8.50 The impact of the habitat creation is therefore considered to be medium**.** The magnitude of impact is therefore, considered to be **medium.**

Significance of effect

9.10.8.51 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **moderate beneficial** significance which is significant in EIA terms.

Wintering bird assemblage

Sensitivity of the receptor

9.10.8.52 The Project site supports a range of bird species of conservation importance during winter. Although none of these occurred in numbers that would be considered of above local importance, the assemblage as a whole was sufficiently diverse to be of medium (county) importance. As such, the sensitivity of these receptors is therefore **medium**.

Magnitude of impact

9.10.8.53 The Project would include new habitat creation that would benefit a range of wintering species that use the site. The combination of new species-rich grasslands, enhanced floodplain meadow along the River Evenlode and significant new hedgerow planting would provide a more diverse variety of habitats post development.

9.10.8.54 The impact of the habitat creation is therefore considered to be medium. The magnitude of impact is therefore, considered to be **medium.**

Significance of effect

9.10.8.55 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **moderate beneficial** which is significant in EIA terms.

Great crested newt

Sensitivity of the receptor

9.10.8.56 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conservation importance and has medium ability to recover.

Magnitude of impact

9.10.8.57 The habitat creation associated with the Project site will provide new GCN terrestrial habitat, improving the status of the habitat from arable land to grasslands. Opportunities to create new water bodies to benefit this species will also be explored with stakeholders.

9.10.8.58 The impact of the new habitat creation will be long term. The magnitude of impact is therefore, considered to be **medium.**

Significance of effect

9.10.8.59 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **moderate beneficial** which is significant in EIA terms.

Badger

Sensitivity of the receptor

9.10.8.60 It is considered that the sensitivity of the receptor is **low** as badger is of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.10.8.61 The Project would provide enhanced foraging habitat for badger via the creation of new grasslands with no agricultural input within the panel arrays. Appropriate mammal passes would be provided within all fencing surrounding the site to ensure that such habitat is available.

9.10.8.62 The magnitude of impact is therefore considered to be **medium.**

Significance of effect

9.10.8.63 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be low. The effect will, therefore, be **minor beneficial** which is not significant in EIA terms.

Bat species assemblage

Sensitivity of the receptor

9.10.8.64 It is considered that the sensitivity of the receptor is **medium** as the population of bats in the area around the Project site is considered to be of county conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.8.65 The Project would provide extensive new and enhanced commuting habitat for the local bat assemblage with over 29km of new hedgerow and a similar distance of reinforced hedgerows. Further, 5ha of new woodland and new grasslands with no agricultural inputs and a greater botanic diversity would improve the invertebrate populations and hence foraging potential of the Project site for bats.

9.10.8.66 The magnitude of impact is therefore considered to be **medium.**

Significance of effect

9.10.8.67 The magnitude of the impact is deemed to be medium and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **moderate beneficial**, which is significant in EIA terms.

Terrestrial invertebrate assemblage

Sensitivity of the receptor

9.10.8.68 Surveys for this group are on-going and will be reported within the ES. However, given the intensive agricultural nature of the majority of the Project site (and consequent lack of botanic/structural diversity), it is considered unlikely that the invertebrate assemblage of the Project site would be of more than local and therefore **low** sensitivity.

Magnitude of impact

9.10.8.69 The Project would provide extensive new and enhanced habitat for the local invertebrate assemblage with over 29km of new hedgerow and a similar distance of reinforced hedgerows. Further, 5ha of new woodland and new grasslands with no agricultural inputs and a greater botanic diversity would increase the diversity of habitats present for invertebrates. The corridor along the River Evenlode will also be of value to invertebrates.

9.10.8.70 The magnitude of impact is therefore predicted to be **medium**.

Significance of effect

9.10.8.71 The magnitude of the impact is deemed to be medium and the sensitivity of the receptor is considered to be low. The effect will, therefore, be **minor beneficial**, which is not significant in EIA terms.

Dormouse

Sensitivity of the receptor

9.10.8.72 Although no specific surveys have been undertaken for dormouse, they are considered likely to occur within the hedgerow network on site and the surrounding woodland. It is considered that the sensitivity of the receptor is **medium** as the population of dormouse in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.8.73 The Project would create extensive new habitat for dormice with the provision of over 29km of new hedgerow, a similar distance of enhanced hedgerow and over 5ha of new woodland.

9.10.8.74 The magnitude of impact is therefore, considered to be **medium.**

Significance of effect

9.10.8.75 The magnitude of the impact is deemed to be medium and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **moderate beneficial**, which is significant in EIA terms.

Otter

Sensitivity of the receptor

9.10.8.76 Although no specific surveys have been undertaken for otter, they are known to occur along the River Evenlode and, as such, are likely to use the Project site for commuting and foraging. There may also be holts located along the river where it passes within the Project site.

9.10.8.77 It is considered that the sensitivity of the receptor is **medium** as the population of otter in the area around the Project is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.10.8.78 The improved habitat along the River Evenlode would provide enhanced foraging and commuting habitat for this species within the context of the Project site.

9.10.8.79 Given the home range of otters can be greater than 20km, it is unlikely that the improved habitat would provide benefit beyond the site level. As such, the magnitude of impact is considered to be **low.**

Significance of effect

9.10.8.80 The magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor beneficial**, which is not significant in EIA terms.

Brown hare and hedgehog

Sensitivity of the receptor

9.10.8.81 Although no specific surveys have been undertaken for either species, they are known to occur on site with incidental recordings of brown hare occurring from across the Project site.

9.10.8.82 It is considered that the sensitivity of the receptor is **low** as the population of both species in the area around the Project site is considered to be of local conservation importance and both have a moderate ability to recover.

Magnitude of impact

9.10.8.83 The enhanced grassland habitat across the Project site would provide enhanced habitat for brown hare and hedgehog through improved foraging.

9.10.8.84 The magnitude of impact is therefore, considered to be short term **low**.

Significance of effect

9.10.8.85 This would result in a short term, low impact to a receptor of local value. The magnitude of the impact is deemed to be low and the sensitivity of the receptor is considered to be low. The effect will therefore be **minor beneficial** which is not significant in EIA terms.

9.10.9 Future monitoring

9.10.9.1 A Monitoring plan with respect to ecology will be developed in conjunction with stakeholders.

9.10.9.2 **Table 9.1.18** outlines the proposed monitoring for the Project to test the predictions of the impact assessment. However, these are likely to be expanded upon as the surveys further inform the baseline and to ensure compliance with any EPS licence monitoring requirements.

9.10.9.3 Annual or bi-annual monitoring will be undertaken to ensure that mitigation and compensation areas are providing appropriate functionality to support protected and/or notable species and replacement habitats.

Table 9.1.18: Monitoring

Mitigation number	Measure adopted	How the measure will be secured
9.1	Monitoring of GCN populations in habitat creation and enhancement areas.	Requirement in DCO Monitoring mitigation in EPS licence
9.2	Monitoring of badger populations if any setts require closure	Requirement in DCO Monitoring mitigation in protected species licence
9.3	Monitoring of bird populations, both wintering and breeding	Requirement in DCO
9.4	Monitoring of populations and habitats, as identified and required through the Environmental Statement in habitat creation and enhancement areas identified.	Requirement in DCO

9.11 Cumulative effect assessment methodology

9.11.1.1 The cumulative effects assessment (CEA) methodology for ecology has followed the methodology set out in Volume 1, Chapter 4: Approach to Environmental Assessment . As part of the assessment, all projects and plans considered alongside the Project have been allocated into 'tiers' reflecting their current stage within the planning and development process.

- Tier 1
  - Under construction
  - Permitted application
  - Submitted application
  - Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact
- Tier 2
  - Scoping report has been submitted
- Tier 3
  - Scoping report has not been submitted
  - Identified in the relevant Development Plan
  - Identified in other plans and programmes.

9.11.1.2 This tiered approach is adopted to provide a clear assessment of the Project alongside other projects, plans and activities.

9.11.1.3 The specific projects, plans and activities scoped into the CEA for ecology, are outlined in **Table 9.1.19**.

Table 9.1.19: List of other projects, plans and activities considered within the CEA

Project/Plan	Status	Distance from the Project (nearest point, km)	Description of project/plan
20/01734/OUT	Pending	Adjacent	Salt Cross Garden Village, 2,200 dwellings and 40ha of employment land. 215ha in size on arable fields.
16/01364/OUT	Under construction	Adjacent	Land east of Woodstock, 300 residential dwellings, up to 1100sqm of A1/A2/B1/D1 floorspace. 17ha in size.
20/01817/FUL	Permitted	Adjacent	Land Between Woodstock Sewage Works And B4027 - Solar Farm, 5MW generating capacity on 9.1ha of land on arable fields.
21/03522/OUT	Pending	Adjacent	West of Rutten Lane Yarnton, The erection of up to 540 dwellings (Class C3), up to 9,000sqm GEA of elderly/extra care residential floorspace (Class C2), a Community Home Work Hub (up to 200sqm)(Class E), alongside the creation of two locally equipped areas for play, one NEAP, up to 1.8 hectares of playing pitches and amenity space for the William Fletcher Primary School, two vehicular access points, green infrastructure, areas of public open space, two community woodland areas, a local nature reserve, footpaths, tree planting, restoration of historic hedgerow, and associated works. All matters are reserved, save for the principal access points. 59ha in size on arable land.
22/01715/OUT	Pending	Adjacent	Land south of Perdiswell Farm, Shipton Road, Erection of up to 500 dwellings with associated access, open space and infrastructure. 49ha in size on arable land.
21/00189/FUL	Pending	1.0	Land north of Hill Rise, Woodstock, 180 dwellings (refused but at appeal in July 23). 11ha on primarily arable land with some rough grassland.
21/00217/OUT	Pending	0.3	Land north of Banbury Road, Woodstock, 235 dwellings with community space and car barns. 17ha on arable land.

9.11.2 Maximum design scenario – cumulative effects assessment

9.11.2.1 The maximum design scenarios identified in **Table 9.1.20** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been selected from the Project Design Envelope provided in Volume 1, Chapter 6: Project Description of the PEIR as well as the information available on other projects and plans, in order to inform a 'maximum design scenario'. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (eg, different foundation type or substation layout), to that assessed here, be taken forward in the final design scheme.

9.11.2.2 There is the potential for cumulative traffic flows during construction and decommissioning of the Project to generate in combination effects due to changes in air quality. However, no cumulative traffic flows for the Project with other plans and projects have been calculated to date. These will be assessed in the ES, once design information has been refined and are not discussed further in this assessment.

Table 9.1.20 Maximum design scenario for the assessment of cumulative effects

Potential cumulative effect	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
The impact of temporary and permanent habitat loss during construction and decommissioning of the Project	Yes	x	Yes	Maximum design scenario as described for the Project in Volume 1, Chapter 6: Project Description of the PEIR assessed cumulatively with the following other projects and plans: **Tier 1** • A20/01734/OUT • 20/01817/FUL • 21/03522/OUT • 22/01715/OUT • 21/00189/FUL • 21/00217/OUT	Only Tier 1 projects within 1km of the Project that involve building upon undisturbed land (greenfield) have been included . Those other projects which involve demolition of existing buildings to create the footprint for new development are not considered to impact upon cumulative habitat loss as these are fundamentally different to those lost within the Project and are unlikely to support the same species present within the Project site. Those other projects greater than 1km from the Project are unlikely to contribute to combined habitat loss on the basis that it is highly unlikely there would be overlap in territory etc. .

Potential cumulative effect	Phase[a]			Maximum Design Scenario	Justification
	C	O	D		
The impact of habitat disturbance during construction, operation and maintenance and decommissioning of the Project	Yes	Yes	Yes	Maximum design scenario as described for the Project (**Table 9.1.13**) assessed cumulatively with the following other projects: **Tier 1** • A20/01734/OUT • 16/01364/OUT • 20/01817/FUL • 21/03522/OUT • 22/01715/OUT • 21/00189/FUL • 21/00217/OUT	All Tier 1 and Tier 2 projects within 1km of the Project are considered as disturbance travels beyond the source point and is dependent upon the ZoI of the IEFs involved within the PEIR assessment.

[a] C=construction, O=operation and maintenance, D=decommissioning

9.12 Cumulative effects assessment

9.12.1.1 A description of the significance of cumulative effects upon ecology receptors arising from each identified impact is given below.

9.12.1.2 No assessment of the cumulative effect of habitat creation has been provided since those arising from the Project are net beneficial. As such, no adverse cumulative effect could occur in combination with other plans/projects.

9.12.1.3 In total, seven Tier 1 projects have been identified for inclusion in the CEA. The majority of these are residential developments on existing arable land that have not yet commenced construction. One (planning ref 20/01817/FUL) is a small solar generating station, also on arable land. One (planning ref 16/01364/OUT) has started construction and is assumed to be complete before the Project construction commences. Outline details of each are provided below.

9.12.1.4 Where overlap between the construction phase for the Project and the construction of nearby developments is likely, the maximum design scenario assumes that they will overlap. It is assumed that the other developments identified will be built out to their maximum permissible extent but that any proposed mitigation and compensation measures will be implemented and, as such, cumulative effects with these phases are unlikely.

9.12.1.5 All developments propose the use of a Construction Environmental Management Plan (or similar) to mitigate any dust generation and the potential for pollution incidents from spills etc. during construction. As such, the potential for cumulative effects to arise from these impacts is screened out from further assessment on the basis that standard mitigation known to be effective will be applied.

9.12.1.6 In addition, given that the other developments identified are, for the most part, residential in nature, the decommissioning phase of the Project will occur during the operational phase of those developments. The nature of the impacts identified for the operational phase of the Tier 1 developments was reviewed within the submitted information. The nature of decommissioning impacts from the Project (such as habitat damage etc.) are different from those in the operational phase of the cumulative developments (cat predation etc.). Given this lack of overlap of impact pathway, cumulative effects in the decommissioning phase of the Project are considered unlikely and are not assessed further.

9.12.1.7 As no INNS have been identified to date on the Project site, this impact is not assessed further at this stage. This position will be reviewed as further botanical surveys are completed on site and will be assessed in the ES, if considered necessary.

9.12.1.8 Where no change is predicted in the scheme only of IEFs for the Project, there is no possible cumulative effect. As such, these are not assessed within the CEA.

9.12.1.9 Relevant information about each of the other developments included in the CEA for ecology provided below and this is followed by the assessment.

20/01734/OUT Salt Cross Garden Village

9.12.1.10 The Salt Cross Garden Village application comprises 2,200 dwellings and 40ha of employment land. The site covers some 215ha adjacent to the Project site and to the direct north of the A40. The site is predominantly arable and improved grass pasture with connecting hedgerows and small areas of woodland (Stantec, 2020). A range of protected and notable species were found during surveys including GCN, grass snake and otter.

9.12.1.11 After the application of mitigation and avoidance measures, no significant adverse residual effects on any receptor were identified.

16/01364/OUT

9.12.1.12 This project comprises 300 residential dwellings and up to 1100sqm of A1/A2/B1/D1 class floorspace. This development is currently under construction. No final date for completion is available although it is assumed there will be no overlap with the Project. As such, it is assumed that all pre-development impacts have already been mitigated appropriately with the only potential cumulative effects arising from those during operation. The site was subject to ecology surveys pre construction that identified a range of receptors including badger, GCN and bats (BSG, 2016).

9.12.1.13 After the application of mitigation and avoidance measures, no significant adverse residual effects on any receptor were identified.

20/01817/FUL

9.12.1.14 Solar Farm, 5MW generating capacity on 9.1ha of arable land to provide renewable energy to the Blenheim Estate. The ecology surveys to support the proposal (BSG, 2020) identified potential impacts to GCN, reptiles, otter, dormice and birds. Indirect disturbance of badger was also identified.

9.12.1.15 After the application of mitigation and avoidance measures, no significant adverse residual effects on any receptor were identified.

21/03522/OUT

9.12.1.16 This project comprises up to 540 residential dwellings and other supporting development on circa 60ha of arable land near to Yarnton to the west of the Project adjacent to the A44. Ecology work to support the application (Aspect Ecology, 2022 – note that, other than the summary table of effects, the 2022 addendum appears to have replaced the original Chapter 8 Ecology on the local authority's website) identified populations of reptiles present along with a range of farmland birds and other protected species.

9.12.1.17 After the application of mitigation and avoidance measures, no significant adverse residual effects on any receptor were identified.

22/01715/OUT

9.12.1.18 Erection of up to 500 dwellings with associated access, open space and infrastructure on 49ha of arable land adjacent to A44 and to the immediate south of 16/01364/OUT. The ecology chapter of the ES submitted with the

application (BSG, 2022) identified a range of receptors present including reptiles, badger, bats and assumed presence of dormice.

9.12.1.19 After the application of mitigation and avoidance measures, no significant adverse residual effects on any receptor were identified.

21/00189/FUL

9.12.1.20 Land north of Hill Rise, Woodstock comprising 180 dwellings (refused but at appeal in July 23) on 11ha of arable land to the west of the Project. Surveys identified the presence of badgers, reptiles, GCN and bats. A range of farmland birds were also identified as present.

9.12.1.21 After the application of mitigation and avoidance measures, no significant adverse residual effects on any receptor were identified.

21/00217/OUT

9.12.1.22 Land north of Banbury Road, Woodstock comprising 235 dwellings with community space and car barns on 17ha of arable land. This development was submitted together with 21/00189/FUL and subject to a joint assessment. Similar receptors were identified (BSG 2021).

9.12.1.23 After the application of mitigation and avoidance measures, no significant adverse residual effects on any receptor were identified.

9.12.2 The impact of temporary and permanent habitat loss during construction of the Project

Tier 1 projects

Breeding bird assemblage

Sensitivity of the receptor

9.12.2.1 It is considered that the sensitivity of the receptor is **medium** based on the assemblage of species present including a range of birds of conservation concern.

Magnitude of impact

9.12.2.2 The Project will result in the loss of arable habitat used by some ground nesting bird species, in particular skylark, although the hedgerows and woodlands will be retained.

9.12.2.3 All of the Tier 1 projects identified above supported similar breeding bird assemblages to the Project site, occurring within the same arable landscape setting. All of these projects set out the necessary mitigation to address such impacts and reduce the residual effect to not significant. The scale of the Project (>1,300 ha) is much larger than the combined area of the other Tier 1 projects considered here. As such, the magnitude of cumulative impact is therefore, considered to still be **low.**

Significance of effect

9.12.2.4 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **minor adverse** significance which is not significant in EIA terms.

Wintering bird assemblage

Sensitivity of the receptor

9.12.2.5 It is considered that the sensitivity of the receptor is **medium** based on the assemblage of bird species present including a range of those of conservation significance.

Magnitude of impact

9.12.2.6 The Project would result in the loss of arable habitat used by some wintering bird species although the hedgerows and woodlands would be retained.

9.12.2.7 All of the Tier 1 projects identified above supported similar wintering bird populations to the Project site, occurring within the same arable landscape setting. All of these projects set out the necessary mitigation to address such impacts and reduce the residual effect to not significant. The scale of the Project (>1,300 ha) is much larger than the combined area of the other Tier 1 projects considered here. As such, the magnitude of cumulative impact is therefore considered to still considered to be **medium.**

Significance of effect

9.12.2.8 The magnitude of impact is deemed to be medium and the sensitivity of receptor is considered to be medium. The effect will, therefore, be of **moderate adverse** significance which is significant in EIA terms.

Great crested newt

Sensitivity of the receptor

9.12.2.9 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conservation importance and has medium ability to recover.

Magnitude of impact

9.12.2.10 The Project would result in the temporary loss of small areas of low-quality terrestrial habitat in the form of arable land within fields near to the ponds that have been found to support GCN within and near to the Project site. There would be no loss of aquatic habitat for this species with all waterbodies protected during construction.

9.12.2.11 The impact is predicted to be limited in extent as the core habitats for this species would be the woodlands, hedgerows and associated margins all of which are to be retained and protected. Any loss of habitat would be temporary (a maximum in any one location of circa 1 year) with habitat reinstated post construction.

9.12.2.12 Several of the Tier 1 projects identified above supported populations of GCN including 20/01734/OUT and several around Woodstock with permanent loss of low-quality foraging habitat (arable land). All of these projects set out the necessary mitigation to address such impacts and reduce the residual effect to not significant.

9.12.2.13 The magnitude of cumulative impact is therefore, considered to be **low.**

Significance of effect

9.12.2.14 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **minor adverse** which is not significant in EIA terms.

Badger

Sensitivity of the receptor

9.12.2.15 It is considered that the sensitivity of the receptor is **low** as badger is of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.12.2.16 Badger activity was spread across the majority of the Project site (Appendix 9.7: Badger Survey). Several of the Tier 1 projects identified badger present on site including 20/01734/OUT. However, given the distance from the setts identified on the Project site and the Tier 1 projects (>1km)it is very unlikely that any of the clans that were found across the Project site would overlap with those from the Tier 1 projects; badger territories in good habitat are on average around 50ha with main setts at least 500m apart. As such, there would also be no impact from habitat loss result in any clans being forced into each other's territory.

9.12.2.17 The magnitude of cumulative impact is therefore considered to be **low.**

Significance of effect

9.12.2.18 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be low. The effect will, therefore, be **minor adverse** which is not significant in EIA terms.

Brown hare and hedgehog

Sensitivity of the receptor

9.12.2.19 Although no specific surveys have been undertaken for either species, they are known to occur on site with incidental recordings of brown hare occurring from across the Project site.

9.12.2.20 It is considered that the sensitivity of the receptor is **low** as the population of both species in the area around the Project is considered to be of local conservation importance and both have a moderate ability to recover.

Magnitude of impact

9.12.2.21 Areas of arable field habitat for both brown hare and hedgehog would be affected by the Project temporarily and permanently during the construction period, but all woodland and hedgerows would be retained.

9.12.2.22 Although no specific surveys were undertaken with respect to these receptors within the Tier 1 projects, they were identified as potentially present in several. Application 22/01715/OUT identified them as possibly present but in such low numbers that no assessment was necessary. They were considered possibly present within 21/00189/FUL although no impact assessment for these species was available. The solar farm project (20/01817/FUL) identified a net benefit for these species from new habitat creation. Given the scale of the Project compared to these other developments, the potential for combined effects that exceed those already identified is likely to be minimal.

9.12.2.23 As such, the cumulative impact is therefore predicted to be low. The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.12.2.24 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be low. The effect will, therefore, be **minor adverse** which is not significant in EIA terms.

9.12.3 The impact of habitat disturbance during construction of the Project

Tier 1 projects

9.12.3.1 Construction, operation and maintenance and decommissioning of the Project may result in the disturbance of habitat (e.g. movement, noise, light spill, vibration), which may support protected or notable species, in combination with other plans and projects.

Nationally Designated Sites

Sensitivity of the receptor

9.12.3.2 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated sites to the Project are the Strong Copse component of the Wytham Woods SSSI which is directly adjacent to the cable route corridor along the B4044 and Blenheim Park SSSI which is on the opposite side of the A4095 to the Project site boundary.

9.12.3.3 Such sites vary in their vulnerability to impacts and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats.

9.12.3.4 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.12.3.5 The Project would not result in any direct or indirect disturbance during construction within the majority of nationally designated site within the ZoI due to the distance between the Project and these sites.

9.12.3.6 The trenching of cables within the existing carriageway along the B4044 when adjacent to Wytham Woods SSSI may cause some very local short term noise disturbance to fauna interest features within the woodland. However, this would be short term (<1 year) and very localised.

9.12.3.7 None of the Tier 1 projects are located within 1km of Wytham Woods SSSI nor Blenheim Woods SSSI where these sites are located near to the Project site. As such, cumulative impacts from disturbance are considered unlikely.

9.12.3.8 Therefore, the impact is predicted to remain as negligible. The magnitude of impact is therefore, considered to be **negligible (Wytham Woods SSSI only).**

Significance of effect

9.12.3.9 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Locally Designated Sites

Sensitivity of the receptor

9.12.3.10 Locally designated sites are those considered to be of importance within the context of the county of Oxfordshire. The nearest locally designated sites to the Project are Long Mead LWS and Swinford Farm Meadow LWS, both of which occur within the cable easement north of Wytham Woods. A number of other locally designated sites occur adjacent to the Project site boundary.

9.12.3.11 Such sites vary in their vulnerability to impact from disturbance and their ability to recover from such events. However, on a precautionary basis, they are considered to be both highly vulnerable and with no or very low ability to recover as this would cover the most sensitive habitats (some are designated for their ancient woodland).

9.12.3.12 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.12.3.13 The HDD of cables under the Long Mead LWS and Swinford Farm Meadow LWS would result in some short term disturbance from both noise and vibration as the HDD process takes place. No Tier 1 projects occur within 1km of this area and, as such, cumulative disturbance impacts on these sites are considered unlikely.

9.12.3.14 There may be other short term noise disturbance impacts at some of the other locally designated sites that occur near to the Project site during construction.

9.12.3.15 Given the short term and local nature of any disturbance generated by the Project, cumulative disturbance impacts with Tier 1 projects are considered unlikely to change the magnitude of such impacts. The magnitude of impact is, therefore, considered to be **negligible.**

Significance of effect

9.12.3.16 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Ancient woodland

Sensitivity of the receptor

9.12.3.17 Ancient woodland takes hundreds of years to establish and is defined as an irreplaceable habitat. Ancient woodland is deemed to be of high value and none or low recoverability.

9.12.3.18 As such, the sensitivity of the receptor is therefore **very high**.

Magnitude of impact

9.12.3.19 The Project has been designed to avoid any areas of ancient woodland and all that occur adjacent to the Project site boundary will be protected by a minimum of 15 m buffer as per **Table 9.1.14** above. There may be some short term disturbance of areas of ancient woodland that occur near to the Project site boundary during construction.

9.12.3.20 None of the Tier 1 projects occur near to parcels of ancient woodland such that any overlap in disturbance impacts might occur.

9.12.3.21 The cumulative impact would be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact would affect the receptor indirectly. The magnitude of impact is, therefore, considered to remain as **negligible.**

Significance of effect

9.12.3.22 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be very high. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Broadleaved woodland HPI

Sensitivity of the receptor

9.12.3.23 Areas of non-ancient broadleaved woodland HPI have been excluded from within the Project site boundary but do occur adjacent to it. Matured broadleaved trees are important to combat climate change and help prevent water pollution and soil erosion. They also provide potential breeding habitat for species such as hazel dormice and bats.

9.12.3.24 As such, the sensitivity of the receptor is therefore **medium**.

Magnitude of impact

9.12.3.25 The Project has been designed to avoid any areas of woodland and all that occur adjacent to the Project site boundary will be protected by a minimum of a 5 m buffer as per **Table 9.1.14** above. Installation of any cables adjacent to woodland would be completed following the principles set out in the Strategic Arboriculture Impact and Method Statement (see Volume 3, Appendix 8.3) to ensure no impact to any trees. There could, however, be short term disturbance from noise and vibration during construction.

9.12.3.26 Several of the Tier 1 projects occur adjacent to broadleaved woodland. Planning ref 22/01715/OUT noted that 0.39ha of woodland would be removed for access to facilitate the development. Although not assessed directly, this is likely to disturb the retained habitats adjacent.

9.12.3.27 Given the scale of the Project and the short term (less than one year) nature of any disturbance, it is unlikely that any localised overlap of construction or other activities would increase the level of disturbance on woodland and the species it supports above that already assessed.

9.12.3.28 The disturbance impact is therefore predicted to be short term (less than one year) and there would be no long term disturbance. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.12.3.29 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Floodplain Meadow HPI

Sensitivity of the receptor

9.12.3.30 Areas of floodplain meadow HPI occur within the Project site adjacent to the River Evenlode.

9.12.3.31 As such, the sensitivity of the receptor is therefore **medium**.

Magnitude of impact

9.12.3.32 The Project has been designed to avoid areas of floodplain meadow. There could, however, be short term disturbance from noise and vibration during construction.

9.12.3.33 None of the Tier 1 projects occur near to parcels of floodplain meadow HPI such that any overlap in disturbance impacts might occur.

9.12.3.34 The cumulative impact would be predicted to be of local spatial extent, short term duration, intermittent and would have reversibility. It is predicted that the impact would affect the receptor indirectly. The magnitude of impact is, therefore, considered to remain as **negligible.**

Significance of effect

9.12.3.35 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Waterbodies (including ponds and watercourses HPIs)

Sensitivity of the receptor

9.12.3.36 Waterbodies, including ponds, ditches, streams and rivers, have a high conservation importance, high vulnerability to pollution incidents, a potential to support protected species and have low recoverability.

9.12.3.37 As such, the sensitivity of these receptors is therefore **high**.

Magnitude of impact

9.12.3.38 Any waterbody that occurs within the Project site or adjacent to it will be protected by a minimum of a 5 m (ponds) and 8 m buffer (watercourses). Installation of any cables that cross such features would be via HDD.

9.12.3.39 There may be some temporary noise and vibration disturbance of such habitats, during HDD activities, for example.

9.12.3.40 The majority of the Tier 1 sites are located away from waterbodies and, as such, there is limited potential for cumulative disturbance impacts. The only exception to this is the Oxfordshire Garden Village, located 100m south of the Hanborough Stream which joins the River Evenlode east of Cassington.

9.12.3.41 The disturbance impact is predicted to be short term (less than one year) and riparian habitats will not be impacted in the long term. The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.12.3.42 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance which is not significant in EIA terms.

Hedgerows HPI

Sensitivity of the receptor

9.12.3.43 Hedgerows provide important connectivity for a species such as hazel dormice and bats but would have the ability to establish following a planting and management regime.

9.12.3.44 As such, the sensitivity of these receptors is therefore **medium**.

Magnitude of impact

9.12.3.45 The Project has been designed to retain all hedgerow within the Project site boundary with all cable routes to be via existing field accesses or buried within existing carriageways, where practicable. A 5 m buffer will be

maintained around all field boundary hedgerows to ensure their protection during construction.

9.12.3.46 There may be indirect noise and vibration disturbance of hedgerows during construction activities. Such disturbance impacts are predicted to be short term (less than one year) and there would be no long term disturbance.

9.12.3.47 All of the Tier 1 projects included in the CEA include hedgerow networks or are surrounded by hedgerows, being located in the same arable landscape as the Project. Of these, the largest is the Oxfordshire Garden Village (ref 20/01734/OUT) which included circa 17.6km of hedgerow of which 2.6km was to be lost. Although disturbance of this habitat is not assessed directly, it is likely to be locally high.

9.12.3.48 However, given the scale of the Project and the short term (less than one year) nature of any cumulative disturbance, it is unlikely that any localised overlap of construction or other activities would increase the level of disturbance on hedgerows and the species they support above that already assessed.

9.12.3.49 The magnitude of impact is therefore, considered to be **negligible.**

Significance of effect

9.12.3.50 The magnitude of impact is deemed to be negligible and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **minor adverse** which is not significant in EIA terms.

Breeding bird assemblage

Sensitivity of the receptor

9.12.3.51 It is considered that the sensitivity of the receptor is **medium** based on the assemblage of bird species supporting a number of species of conservation concern**.**

Magnitude of impact

9.12.3.52 The Project would result in the loss of arable habitat used by some breeding bird species although the hedgerows and woodlands would be retained. However, there may be indirect noise and vibration disturbance of such habitats during construction activities. Such disturbance impacts are predicted to be short term (less than one year) and there would be no long term disturbance.

9.12.3.53 All of the Tier 1 projects identified above supported similar breeding bird populations to the Project site, occurring within the same arable landscape setting. All of these projects set out the necessary mitigation to address such impacts and reduce the residual effect to not significant. The scale of the Project (>1,300 ha) is much larger than the combined area of the other Tier 1 projects considered here. As such, the magnitude of cumulative impact is therefore considered to still be **low.**

Significance of effect

9.12.3.54 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be minor adverse which is not significant in EIA terms.

Wintering bird assemblage

Sensitivity of the receptor

9.12.3.55 It is considered that the sensitivity of the receptor is **medium** based on the assemblage of bird species supporting a number of species of conservation concern.

Magnitude of impact

9.12.3.56 The Project would result in the loss of arable habitat used by some wintering bird species although the hedgerows and woodlands would be retained. However, there may be indirect noise and vibration disturbance of such habitats during construction activities. Such disturbance impacts are predicted to be short term (less than one year) and there would be no long term disturbance.

9.12.3.57 All of the Tier 1 projects identified above supported similar wintering bird populations to the Project site, occurring within the same arable landscape setting. All of these projects set out the necessary mitigation to address such impacts and reduce the residual effect to not significant. The scale of the Project (>1,300 ha) is much larger than the combined area of the other Tier 1 projects considered here. As such, the magnitude of cumulative impact is therefore considered to be **low.**

Significance of effect

9.12.3.58 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be minor adverse which is not significant in EIA terms.

Great crested newt

Sensitivity of the receptor

9.12.3.59 It is considered that the sensitivity of the receptor is **medium** as GCN is medium conservation importance and has medium ability to recover.

Magnitude of impact

9.12.3.60 There would be a temporary disturbance of terrestrial habitat and aquatic habitats during construction from both noise and vibration within the Project site, which has the potential to cause disturbance to GCN populations.

9.12.3.61 The disturbance impact from the Project is predicted to be short term (less than one year) and the terrestrial and aquatic habitats would not be impacted by disturbance in the long term.

9.12.3.62 A number of the Tier 1 projects identified GCN as present on or near their sites. For example, two distinct populations were found within the Oxfordshire Garden Village (ref 20/01734/OUT) while offsite ponds were identified as supporting populations within 250m of the Blenheim Solar project (ref 20/01817/FUL). Disturbance impacts were not assessed specifically, although it is assumed that they would occur with the loss of terrestrial habitat.

9.12.3.63 Given the proximity of these development sites to the Project (most are adjacent to the Project site boundary), it is possible that there would be some overlap with respect to disturbance impacts on GCN populations. However, given the scale of the Project and the short term (less than one year) nature of any such cumulative disturbance, it is unlikely that any localised overlap of construction or other activities would increase the level of disturbance on any specific GCN population above that already assessed.

9.12.3.64 The magnitude of impact is therefore, considered to be **low.**

Significance of effect

9.12.3.65 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be medium. The effect will, therefore, be **minor adverse** which is not significant in EIA terms.

Badger

Sensitivity of the receptor

9.12.3.66 It is considered that the sensitivity of the receptor is **low** as badger is of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.12.3.67 Badger activity was spread across the majority of the Project site (Appendix 9.7: Badger Survey). All of the setts identified were present either within the hedgerow network on site or in small parcels of woodland within the Project site or in larger blocks external to it. All woodland/hedgerows will be protected during construction with at least 5m buffers and appropriate fencing as set out in **Table 9.1.14** above. As such, it is not anticipated that any sett would need to be permanently closed. However, it may be necessary to temporarily close a sett for the duration of construction activities, depending on the distance the sett is from the solar arrays. Such construction activities may cause temporary noise and vibration disturbance.

9.12.3.68 Several of the Tier 1 projects identified badger present on site including 20/01734/OUT. However, given the distance from the setts identified on the Project site and the Tier 1 projects (>1km) it is very unlikely that any of the clans that were found across the Project site would overlap with those from the Tier 1 projects; badger territories in good habitat are on average around 50ha with main setts at least 500m apart. As such, there would also be no impact from habitat loss resulting in any clans being forced into each other's territory.

9.12.3.69 The magnitude of impact is therefore considered to be **low.**

Significance of effect

9.12.3.70 The magnitude of impact is deemed to be low and the sensitivity of receptor is considered to be low. The effect will, therefore, be **minor adverse** which is not significant in EIA terms.

Bat species assemblage

Sensitivity of the receptor

9.12.3.71 It is considered that the sensitivity of the receptor is **medium** as the population of bats in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.12.3.72 All landscape features that could be used by foraging, commuting and roosting bats would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction. A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by bats will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by bats.

9.12.3.73 It is possible that other short term disturbance of commuting/foraging bats could take place due to noise and vibration during construction activities; however, this would be minimised through the implementation of appropriate buffers to all features that could be used by bats.

9.12.3.74 Similar bat assemblages have been recorded within most of the Tier 1 sites, in particular the larger ones, to that assumed to be present within the Project site. The majority of them identified potential effects on bats from disturbance during construction (primarily from lighting) of short term, negligible adverse magnitude.

9.12.3.75 It is highly unlikely that any short term overlap in construction timings would increase the potential magnitude of disturbance impacts beyond those already identified, given that these would be short term.

9.12.3.76 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.12.3.77 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **minor adverse**, which is not significant in EIA terms.

Terrestrial invertebrate assemblage

Sensitivity of the receptor

9.12.3.78 It is considered that the sensitivity of the receptor is **low** as the invertebrate assemblage of the Project site is considered to be of local conservation importance and has a relatively high ability to recover.

Magnitude of impact

9.12.3.79 It is possible that other short term disturbance of invertebrates could take place due to noise and vibration during construction activities; however, this would be minimised through the implementation of appropriate buffers to all features that could be used by invertebrates.

9.12.3.80 The majority of Tier 1 projects assessed did not include terrestrial invertebrates as a receptor on the basis that the arable landscape they sat within would be of poor quality for such species. As such, cumulative effects with these projects are considered unlikely.

9.12.3.81 A number of rarer species were identified as present within the for the Oxfordshire Garden Village (ref 20/01734/OUT). However, the impact of disturbance on invertebrates was not assessed directly, it is assumed on the basis that such impacts were unlikely. As such, cumulative effects with the Project are also considered unlikely.

9.12.3.82 The magnitude of impact is therefore considered to be **negligible**.

Significance of effect

9.12.3.83 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Dormouse

Sensitivity of the receptor

9.12.3.84 Although no specific surveys have been undertaken for dormouse, they are considered likely to occur within the hedgerow network on site and the surrounding woodland. It is considered that the sensitivity of the receptor is **medium** as the population of dormouse in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.12.3.85 All landscape features that could be used by foraging, commuting and nesting dormice would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction. A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by dormice will

be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by dormice.

9.12.3.86 It is possible that other short term disturbance of dormice could take place due to noise and vibration during construction activities; however, this would be minimised through the implementation of appropriate buffers to all features that could be used by this species.

9.12.3.87 The majority of the Tier 1 sites considered did not identify dormice as present on site. As such, cumulative effects are considered unlikely.

9.12.3.88 Planning ref 22/01715/OUT did not find this species present during surveys in 2021 but they were recorded on site previously in 2014. As such, presence was assumed on a precautionary basis. This project is located near Woodstock where possible cable routes would run for the Project. The potential for overlapping construction periods between the two projects is limited. Therefore, the potential for cumulative disturbance of this species, beyond that already assessed for disturbance effects, is considered unlikely at this stage.

9.12.3.89 The magnitude of impact is therefore considered to be **negligible.**

Significance of effect

9.12.3.90 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Otter

Sensitivity of the receptor

9.12.3.91 Although no specific surveys have been undertaken for otter, they are known to occur along the River Evenlode and, as such, are likely to use the Project site for commuting and foraging. There may also be holts located along the river where it passes within the Project site.

9.12.3.92 It is considered that the sensitivity of the receptor is **medium** as the population of otter in the area around the Project site is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.12.3.93 All landscape features that could be used by foraging, commuting, breeding and resting otter would be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction.

9.12.3.94 A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows, watercourses and other features that could be used by otter will be protected from light spill. Any task-specific lighting necessary

during construction will be directional away from features that could be used by otter.

9.12.3.95 It is possible that other short term disturbance of otter could take place due to noise and vibration during construction activities; however, this would be short term and minimised through the implementation of appropriate buffers to all features that could be used by this species.

9.12.3.96 Otter were identified using the Hanborough Stream to the north of the Oxfordshire Garden Village project (ref 20/01734/OUT). This stream passes through the Project site within the Enhancement Area shortly before it joins the River Evenlode to the north of Cassington. There may therefore be some localised overlap in disturbance impact, but this is unlikely to be of greater magnitude than already assessed, given that the area of overlap of otter territory is within the Enhancement Area, rather than within an area where construction will occur.

9.12.3.97 As such, the magnitude of impact is considered to be **negligible.**

Significance of effect

9.12.3.98 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be medium. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

Brown hare and hedgehog

Sensitivity of the receptor

9.12.3.99 Although no specific surveys have been undertaken for either species, they are known to occur on site with incidental recordings of brown hare occurring from across the Project site.

9.12.3.100 It is considered that the sensitivity of the receptor is **low** as the population of both species in the area around the Project site is considered to be of local conservation importance and both have a moderate ability to recover.

Magnitude of impact

9.12.3.101 A construction lighting plan will be detailed within the CoCP, to be in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It will set out how hedgerows and other features that could be used by these species will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by this receptor.

9.12.3.102 It is possible that other short term disturbance of this receptor could take place due to noise/vibration during construction activities; however, this would be short term for the duration of construction within a specific field.

9.12.3.103 Given all of the Tier 1 schemes identified occurred on arable land, there is some potential for overlap of disturbance on these receptors during construction. However, it is unlikely that the magnitude of this disturbance

would exceed that already identified, given the short duration it could occur for in any one location within the site.

9.12.3.104 The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.12.3.105 The magnitude of the impact is deemed to be negligible and the sensitivity of the receptor is considered to be low. The effect will, therefore, be **negligible**, which is not significant in EIA terms.

9.12.4 Future monitoring

9.12.4.1 Future monitoring remains as per **section 9.9.9**.

9.13 Transboundary effects

9.13.1.1 As per the scoping report, it was concluded that the Project is unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State and therefore a transboundary assessment is not proposed.

9.14 Inter-related effects

9.14.1.1 Inter-relationships are the impacts and associated effects of different aspects of the Project on the same receptor. These are as follows.

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Project (construction, operation and maintenance and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases (e.g., construction noise effects from piling, operational substation noise, and decommissioning disturbance).
- Receptor led effects: Assessment of the scope for all effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on IEFs such as direct habitat loss or disturbance, water pollution/change in water flow etc., may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.

9.14.1.2 The inter-related effects methodology is provided in Chapter 19: Cumulative Effects and Inter-relationships of the PEIR and will be assessed further at the ES stage.

9.15 Summary of impacts, mitigation measures and monitoring

9.15.1.1 Information on ecology within the study area was collected through review of available literature, other assessments, UK statutory guidance and detailed analysis of the data collected during site-specific surveys.

9.15.1.2 **Table 9.1.21** presents a summary of the potential impacts, measures adopted as part of the Project and residual effects in respect to ecology. The impacts assessed include:

- The impact of temporary and permanent habitat loss;
- The impact of habitat disturbance;
- The impact of pollution caused by accidental spills/contaminant release;
- The impact of Invasive and Non-native Species (INNS);
- The impact of habitat creation;
- The impact of dust generation;
- The impact of vehicle emissions; and
- The impact of habitat creation.

9.15.1.3 It is concluded that there would be the following likely significant effects arising from the Project during the construction, operation and maintenance or decommissioning phases:

- Habitat creation during construction on Nationally Designated Sites (beneficial);
- Habitat creation during construction on Locally Designated Sites (beneficial);
- Habitat creation during construction on Ancient Woodland (beneficial);
- Habitat creation during construction on Hedgerows HPI (beneficial);
- Habitat creation during construction on Waterbodies HPI (beneficial);
- Habitat creation during construction on GCN (beneficial);
- Habitat creation during construction on bat species assemblage (beneficial);
- Habitat creation during construction on dormice (beneficial); and
- Habitat loss during construction on wintering birds (adverse).

9.15.1.4 **Table 9.1.22** presents a summary of the potential likely significant cumulative impacts, mitigation measures and residual effects. The cumulative effects assessed include:

- The impact of temporary and permanent habitat loss; and
- The impact of habitat disturbance.

9.15.1.5 It is concluded that there would be no additional likely significant cumulative effects from the Project together with other projects and plans beyond those identified for the Project alone.

9.15.1.6 No potential likely significant transboundary impacts on the ecology of an EEA State have been identified in regard to effects of the Project.

Table 9.1.21: Summary of potential environmental effects and monitoring

a C=construction, O=operational and maintenance, D=decommissioning

M – medium, N – Negligible, L – Low, VH, Very High, H – High, MA – Minor Adverse, ModA – Moderate Adverse, NC – No Change, MB – Minor Beneficial, ModB – Moderate Beneficial.

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
The impact of temporary and permanent habitat loss during construction and decommissioning of the Project	✓		✓	Internationally designated sites C: NC D: NC Nationally designated sites C: NC D: NC Locally designated sites C: NC D: NC Ancient woodland C: NC D: NC Broadleaved woodland HPI C: NC D: NC	Internationally designated sites C: VH D: VH Nationally designated sites C: VH D: VH Locally designated sites C: VH D: VH Ancient woodland C: VH D: VH	Internationally designated sites C: NC D: NC Nationally designated sites C: NC D: NC Locally designated sites C: NC D: NC Ancient woodland C: NC D: NC	Internationally designated sites C: NC D: NC Nationally designated sites C: NC D: NC Locally designated sites C: NC D: NC Ancient woodland C: NC D: NC Broadleaved woodland HPI C: NC D: NC	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				Floodplain meadow HPI C: NC D: NC Hedgerows HPI C: NC D: NC Waterbodies HPI C: NC D: NC Breeding bird assemblage C: L D: N Wintering bird assemblage C: M D: L Great crested newt C: L D: L	Broadleaved woodland HPI C: M D: M Floodplain meadow HPI C: M D: M Hedgerows HPI C: M D: M Waterbodies HPI C: H D: H Breeding bird assemblage C: M D: M Wintering bird assemblage	Broadleaved woodland HPI C: NC D: NC Floodplain meadow HPI C: NC D: NC Hedgerows HPI C: NC D: NC Waterbodies HPI C: NC D: NC Breeding bird assemblage C: MA D: N Wintering bird assemblage C: ModA	Floodplain meadow HPI C: NC D: NC Hedgerows HPI C: NC D: NC Waterbodies HPI C: NC D: NC Breeding bird assemblage C: MA D: N Wintering bird assemblage C: ModA D: MA Great crested newt C: MA D: MA	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				Badger C: L D: L Bat species assemblage C: NC D: NC Terrestrial invertebrate species assemblage C: NC D: NC Dormice C: NC D: NC Brown hare and hedgehog C: L D: L	C: M D: M Great crested newt C: M D: M Badger C: L D: L Bat species assemblage C: M D: M Terrestrial invertebrate species assemblage C: L D: L Dormice C: M D: M	D: MA Great crested newt C: MA D: MA Badger C: MA D: MA Bat species assemblage C: NC D: NC Terrestrial invertebrate species assemblage C: NC D: NC Dormice C: NC D: NC	Badger C: MA D: MA Bat species assemblage C: NC D: NC Terrestrial invertebrate species assemblage C: NC D: NC Dormice C: NC D: NC Brown hare and hedgehog C: MA D: MA	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
					Brown hare and hedgehog C: L D: L	Brown hare and hedgehog C: MA D: MA		
The impact of habitat disturbance during construction, operations and maintenance and decommissioning of the Project	✓	✓	✓	Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: N (Wytham Woods SSSI and Blenheim Park SSSI only) O: NC D: NC Locally designated sites C: N O: NC D: N Ancient woodland C: N O: NC	Internationally designated sites C: VH O: VH D: VH Nationally designated sites C: VH O: VH D: VH Locally designated sites C: VH O: VH D: VH	Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: MA (Wytham Woods SSSI only) O: NC D: NC Locally designated sites C: MA O: NC D: MA	Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: MA (Wytham Woods SSSI only) O: NC D: NC Locally designated sites C: MA O: NC D: MA Ancient woodland C: MA O: NC	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				D: N Broadleaved woodland HPI C: N O: NC D: N Floodplain Meadow HPI C: N O: NC D: N Hedgerows HPI C: N O: NC D: N Waterbodies HPI C: N O: NC D: N Breeding bird assemblage C: L	Ancient woodland C: VH O: VH D: VH Broadleaved woodland HPI C: M O: M D: M Floodplain Meadow HPI C: M O: M D: M Hedgerows HPI C: M O: M D: M Waterbodies HPI	Ancient woodland C: MA O: NC D: MA Broadleaved woodland HPI C: MA O: NC D: MA Floodplain Meadow HPI C: MA O: NC D: MA Hedgerows HPI C: MA O: NC D: MA Waterbodies HPI C: MA O: NC	D: MA Broadleaved woodland HPI C: MA O: NC D: MA Floodplain Meadow HPI C: MA O: NC D: MA Hedgerows HPI C: MA O: NC D: MA Waterbodies C: MA O: NC D: MA Breeding bird assemblage C: MA O: NC	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				O: NC D: N Wintering bird assemblage C: L O: NC D: N Great crested newt C: L O: NC D: N Badger C: L O: NC D: N Bat species assemblage C: N O: NC D: N Terrestrial invertebrate species assemblage	C: H O: H D: H Breeding bird assemblage C: M O: M D: M Wintering bird assemblage C: M O: M D: M Great crested newt C: M O: M D: M Badger C: L O: L D: L	D: MA Breeding bird assemblage C: MA O: NC D: N Wintering bird assemblage C: MA O: NC D: N Great crested newt C: MA O: NC D: N Badger C: MA O: NC D: N Bat species assemblage	D: N Wintering bird assemblage C: MA O: NC D: N Great crested newt C: MA O: NC D: N Badger C: L O: NC D: N Bat species assemblage C: MA O: NC D: MA Terrestrial invertebrate species assemblage C: N	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				C: N O: NC D: N Dormice C: N O: NC D: N Brown hare and hedgehog C: N O: NC D: N	Bat species assemblage C: M O: M D: M Terrestrial invertebrate species assemblage C: L O: L D: L Dormice C: M O: M D: M Brown hare and hedgehog C: L O: L D: L	C: MA O: NC D: MA Terrestrial invertebrate species assemblage C: N O: NC D: N Dormice C: N O: NC D: N Brown hare and hedgehog C: N O: NC D: N	O: NC D: N Dormice C: N O: NC D: N Brown hare and hedgehog C: N O: NC D: N	
The impact of pollution caused by accidental	✓		✓	All receptors:	All receptors:	All receptors:	All receptors:	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
spills/contaminant release during constructions and decommissioning of the Project				C: NC O: NC D: NC	C: NC O: NC D: NC	C: NC O: NC D: NC	C: NC O: NC D: NC	
The impact of dust release caused by ground works etc. during constructions and decommissioning of the Project	✓		✓	All receptors: C: NC O: NC D: NC	All receptors: C: L to VH O: L to VH D: L to VH	All receptors: C: NC O: NC D: NC	All receptors: C: NC O: NC D: NC	
The impact of habitat creation during construction of the Project	✓			Internationally designated sites C: NC Nationally designated sites C: L Locally designated sites C: L Ancient woodland C: L Broadleaved woodland HPI C: L Floodplain meadow HPI	Internationally designated sites C: VH Nationally designated sites C: VH Locally designated sites C: VH Ancient woodland C: VH Broadleaved	Internationally designated sites C: NC Nationally designated sites C: ModB Locally designated sites C: ModB Ancient woodland C: ModB Broadleaved	Internationally designated sites C: NC Nationally designated sites C: ModB Locally designated sites C: ModB Ancient woodland C: ModB Broadleaved woodland HPI C: MB Floodplain meadow HPI	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				C: L Hedgerows HPI C: M Waterbodies HPI C: M Breeding bird assemblage C: M Wintering bird assemblage C: M Great crested newt C: M Badger C: L Bat species assemblage C: M Terrestrial invertebrate	woodland HPI C: M Floodplain meadow HPI C: M Hedgerows HPI C: M Waterbodies HPI C: M Breeding bird assemblage C: M Wintering bird assemblage C: M Great crested newt C: M	woodland HPI C: MB Floodplain meadow HPI C: MB Hedgerows HPI C: ModB Waterbodies HPI C: ModB Breeding bird assemblage C: ModB Wintering bird assemblage C: ModB Great crested newt C: ModB O: NC D: NC	C: MB Hedgerows HPI C: ModB Waterbodies HPI C: ModB Breeding bird assemblage C: ModB Wintering bird assemblage C: ModB Great crested newt C: ModB Badger C: MB Bat species assemblage C: ModB Terrestrial invertebrate	

Description of impact	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				species assemblage C: M Dormice C: M Brown hare and hedgehog C: L	Badger C: L Bat species assemblage C: M Terrestrial invertebrate species assemblage C: L Dormice C: M Brown hare and hedgehog C: L	Badger C: MB Bat species assemblage C: ModB Terrestrial invertebrate species assemblage C: MB Dormice C: ModB Brown hare and hedgehog C: MB	species assemblage C: MB Dormice C: ModB Brown hare and hedgehog C: MB	
The impact of emissions from vehicle movements during constructions and decommissioning of the Project	✓		✓	All receptors: C: NC O: NC D: NC	All receptors: C: L to VH O: L to VH D: L to VH	All receptors: C: NC O: NC D: NC	All receptors: C: NC O: NC D: NC	

[a] C=construction, O=operational and maintenance, D=decommissioning, M – medium, N – Negligible, L – Low, VH, Very High, H – High, MA – Minor Adverse, NC – No Change, MB – Minor Beneficial, ModB – Moderate Beneficial.

Table 9.1.22: Summary of potential cumulative environmental effects, mitigation and monitoring

a C=construction, O=operational and maintenance, D=decommissioning

M – medium, N – Negligible, L – Low, VH, Very High, H – High, MA – Minor Adverse, ModA – Moderate Adverse, NC – No Change, MB – Minor Beneficial, ModB – Moderate Beneficial.

Description of effect	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
Tier 1								
The impact of habitat loss during construction	✓		✓	Breeding bird assemblage C: L D: N Wintering bird assemblage C: M D: L Great crested newt C: L O: NC D: N Badger C: L O: NC D: N Brown hare and hedgehog	Breeding bird assemblage C: M D: M Wintering bird assemblage C: M D: M Great crested newt C: M O: M D: M Badger C: L O: L D: L Brown hare and hedgehog	Breeding bird assemblage C: MA D: N Wintering bird assemblage C: ModA D: MA Great crested newt C: MA O: NC D: N Badger C: MA O: NC D: N	Breeding bird assemblage C: MA D: N Wintering bird assemblage C: ModA D: MA Great crested newt C: MA O: NC D: N Badger C: L O: NC D: N	

Description of effect	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				C: N O: NC D: N	C: L O: L D: L	Brown hare and hedgehog C: N O: NC D: N	Brown hare and hedgehog C: N O: NC D: N	
The impact of habitat disturbance during construction, operations and maintenance and decommissioning	✓	✓	✓	Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: N O: NC D: NC Locally designated sites C: N O: NC D: N Ancient woodland C: N O: NC	Internationally designated sites C: VH O: VH D: VH Nationally designated sites C: VH O: VH D: VH Locally designated sites C: VH O: VH D: VH Ancient woodland C: VH O: VH D: VH	Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: MA (Wytham Woods SSSI only) O: NC D: NC Locally designated sites C: MA O: NC	Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: MA O: NC D: NC Locally designated sites C: MA O: NC D: MA Ancient woodland C: MA O: NC	

Description of effect	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				D: N Broadleaved woodland HPI C: N O: NC D: N Floodplain Meadow HPI C: N O: NC D: N Hedgerows HPI C: N O: NC D: N Waterbodies HPI C: N O: NC D: N Breeding bird assemblage C: L O: NC	 Broadleaved woodland HPI C: M O: M D: M Floodplain Meadow HPI C: M O: M D: M Hedgerows HPI C: M O: M D: M Waterbodies HPI C: H O: H D: H Breeding bird assemblage C: M O: M	D: MA Ancient woodland C: MA O: NC D: MA Broadleaved woodland HPI C: MA O: NC D: MA Floodplain Meadow HPI C: MA O: NC D: MA Hedgerows HPI C: MA O: NC D: MA Waterbodies	D: MA Broadleaved woodland HPI C: MA O: NC D: MA Floodplain Meadow HPI C: MA O: NC D: MA Hedgerows HPI C: MA O: NC D: MA Waterbodies C: MA O: NC D: MA Breeding bird assemblage C: MA O: NC	

Description of effect	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				D: N Wintering bird assemblage C: L O: NC D: N Great crested newt C: L O: NC D: N Badger C: L O: NC D: N Bat species assemblage C: N O: NC D: N Terrestrial invertebrate species assemblage C: N	D: M Wintering bird assemblage C: M O: M D: M Great crested newt C: M O: M D: M Badger C: L O: L D: L Bat species assemblage C: M O: M D: M Terrestrial invertebrate species assemblage C: L	HPI C: MA O: NC D: MA Breeding bird assemblage C: MA O:NC D: N Wintering bird assemblage C: MA O:NC D: N Great crested newt C: MA O: NC D: N Badger C: L O: NC	D: N Wintering bird assemblage C: MA O: NC D: N Great crested newt C: MA O: NC D: N Badger C: L O: NC D: N Bat species assemblage C: MA O: NC D: MA Terrestrial invertebrate species assemblage C: N	

Description of effect	Phase[a]			Magnitude of impact	Sensitivity of the receptor	Significance of effect	Residual effect	Proposed monitoring
	C	O	D					
				O: NC D: N Dormice C: N O: NC D: N Brown hare and hedgehog C: N O: NC D: N	O: L D: L Dormice C: M O: M D: M Brown hare and hedgehog C: L O: L D: L	D: N Bat species assemblage C: MA O: NC D: MA Terrestrial invertebrate species assemblage C: N O: NC D: N Dormice C: N O: NC D: N Brown hare and hedgehog C: N O: NC D: N	O: NC D: N Dormice C: N O: NC D: N Brown hare and hedgehog C: N O: NC D: N	

9.16 Next steps

9.16.1.1 Site-specific surveys are ongoing within the Project site boundary.

9.16.1.2 The methodology followed has multiple stages, enabling the scope of the assessment to be progressively refined and agreed with Natural England and other stakeholders.

9.16.1.3 Further surveys are also proposed for habitats and hedgerows to define the condition of habitats present. This will, in turn, inform the BNG assessment for the Project, with the goal of demonstrating at least a 70% increase in BNG. The updated assessment will be submitted with the ES.

9.16.1.4 The baseline description and impact assessments in this chapter will be updated with results from latest site-specific surveys and responses to consultation for the ES.

9.16.1.5 This, in turn, will inform the development of these measures to be set out in the oLEMP which will be secured as a requirement of the DCO application.

9.17 References

Aspect Ecology (2022) Technical Briefing Note TN04: Addendum to Chapter 8 of the Environment Statement (ES) – Ecology and Nature Conservation

Bibby, C.J., Burgess, N.D., Hill, D.A. & Mustoe, S.H. (2000). Bird Census Techniques, second edition. Academic Press, London.

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014) Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Freshwater Habitats Trust: Oxford

BSG (2016) Land to the South East of Woodstock – Ecology Report.

BSG (2020) Blenheim Net Zero Solar Farm and Heat Exchanger – Ecological Assessment.

BSG (2021) Land North of Hill Rise & Land North of Banbury Road Woodstock ES Chapter 7: Natural Heritage.

BSG (2022) Land East of Park View Woodstock ES Chapter 7: Natural Heritage.

British Standards Institution (2013) Biodiversity – Code of Practice for Planning and Development: BS 42020:2013.

CIEEM (2017) Guidelines for Preliminary Ecological Assessment 2nd Ed. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2022) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2 - updated April 2022. Chartered Institute of Ecology and Environmental Management, Winchester.

English Nature (2001) Great Crested Newt Mitigation Guidelines, First Edition

Froglife (1999) Reptile Survey: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation. Froglife Advice Sheet 10

Froglife (2001). Great Crested Newt Conservation Handbook

Fuller, R.J. (1980). A Method for Assessing the Ornithological Interest of Sites for Conservation. Biological Conservation 17, 229-239.

Gent, T. & Gibson, S. (2003) Herpetofauna Workers' Manual. Joint Nature Conservation Committee.

Gilbert, G., Gibbons, D.W. and Evans, J. (1998). Bird Monitoring Methods: A manual of techniques for key species. RSPB/BTO/JNCC/WWT/ITE/The Seabird Group. RSPB/BTO, Sandy, Beds.

JNCC (2016) Handbook for Phase 1 habitat survey – a technique for environmental audit. JNCC Peterborough.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4), 143-155.

Stantec (2020) Oxfordshire Garden Village Environmental Statement – Volume 1: Main Report.

Online source:

Department for Business, Energy and Industrial Strategy (BEIS) (2021a) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf. Accessed: June 2022.

Department for Business, Energy and Industrial Strategy (BEIS) (2021b) Draft National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf. Accessed: June 2022.

Department for Business, Energy and Industrial Strategy (BEIS) (2021c) Draft National Policy Statement for Electricity Networks Infrastructure (EN5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015238/en-5-draft-for-consultation.pdf. Accessed: June 2022.

Department for Energy Security and Net Zero (DESNZ) (2023a) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf. Accessed: July 2023.

Department for Energy Security and Net Zero (DESNZ) (2023b) Draft National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf. Accessed: July 2023.

Department for Energy Security and Net Zero (DESNZ) (2023c) Draft National Policy Statement for Electricity Networks Infrastructure (EN5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015238/en-5-draft-for-consultation.pdf#page=13&zoom=100,57,690

Department for Levelling Up, Housing and Communities (2023) National Planning Policy Framework. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2

Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government (2021) Planning Practice Guidance. https://www.gov.uk/government/collections/planning-practice-guidance

Department of Energy and Climate Change (DECC) (2011a) Overarching National Policy Statements for Energy (NPS EN-1). Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf].

Department of Energy and Climate Change (DECC) (2011b) National Policy Statement for Renewable Energy Infrastructure. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47856/1940-nps-renewable-energy-en3.pdf].

Department of Energy and Climate Change (DECC) (2011c) National Policy Statements for Electricity Networks Infrastructure (NPS EN-5). Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf].

Department for Environment, Food and Rural Affairs (2021) Habitats Regulations Assessment: Protecting a European site Available: https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site

Department for Environment, Food and Rural Affairs (2022) Consultation on Biodiversity Net Gain Regulations and Implementation. Available: https://consult.defra.gov.uk/defra-net-gain-consultation-team/consultation-on-biodiversity-net-gain-regulations/

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020) Design Manual for Roads and Bridges (DMRB) LA 104, Environmental assessment and monitoring, Revision 1, Available at: https://www.standardsforhighways.co.uk/prod/attachments/0f6e0b6a-d08e-4673-8691-cab564d4a60a?inline=true

IEMA (2016) Environmental Impact Assessment. Guide to Delivering Quality Development. Available: https://www.iema.net/download-document/7014. Accessed: October 2022.

The Planning Inspectorate (2017) Advice Note Ten, Habitat Regulations Assessment relevant to Nationally Significant Infrastructure Projects. Version 8. Available: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/. Accessed April 2022.

Wild Oxford (2020) Nature Recovery Network https://www.wildoxfordshire.org.uk/oxfordshires-nature/oxfordshires-nature-recovery-network. Accessed August 2023.