Botley West Solar Farm

Environmental Statement

Volume 1

Chapter 9: Ecology and Nature Conservation

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Jonathan Alsop	15 November 2024

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.

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Glossary

Term	Meaning
The Applicant	SolarFive Ltd
The Project	Botley West Solar Farm
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 (as amended)
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.

Term	Meaning
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

Abbreviation	Meaning
BBOWT	Berks, Bucks and Oxon Wildlife Trust
BoCC	Birds of Conservation Concern
CDDWS	Cherwell District District Wildlife Site
CEA	Cumulative Effects Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
CTA	Conservation Target Area
DWS	District Wildlife Site
ECoW	Ecology Clerk of Works
eDNA	Environmental DNA (Deoxyribonucleic acid)
EEA	European Economic Area
EPS	European Protected Species
GCN	Great Crested Newt
HDD	Horizontal Directional Drilling
HPI	Habitat 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
MDS	Maximum Design Scenario
NERC	Natural Environment and Rural Communities
NIA	Nature Improvement Area
NH_3	Ammonia
NNR	National Nature Reserve

Abbreviation	Meaning
NO_x	Nitrogen Oxides
NSIP	Nationally Significant Infrastructure Project
NVC	National Vegetation Classification
oCEMP	Outline Construction Environmental Management Plan
oLEMP	Outline Landscape and Ecology Management Plan
PBRA	Preliminary Bat Roost Assessment
PCDDWS	Proposed Cherwell District District Wildlife Site
PIR	Passive Infra-red
PLWS	Potential Local Wildlife Site.
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TN	Technical Note
TVERC	Thames Valley Environmental Records Centre
WCA	Wildlife and Countryside Act
ZoI	Zone of Influence

Units

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

9 Ecology and Nature Conservation

9.1 Introduction

Overview

9.1.1 This chapter of the ES sets out the approach to the assessment of likely significant effects, of the Project, upon ecological receptors. The application for development consent is being made 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, within the county of Oxfordshire (the Project).

9.1.2 This chapter of the Environmental Statement (ES) has been prepared by RPS for Photovolt Development Partners GmbH (PVDP) on behalf of SolarFive Ltd (the Applicant).

9.1.3 SolarFive is the 'special purpose vehicle' (SPV) for the Project and has been awarded a generation licence by Ofgem and offered a grid connection by National Grid Electricity Transmission (NGET) from October 2027. SolarFive is a licence holder under the Electricity Act 1989, and is also a company registered in England and Wales (company no. 12602740).

9.1.4 This ES is 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.

9.1.5 This ES Chapter has been prepared in accordance with the approach set out in the Scoping Report and the subsequent Preliminary Environmental Information Report (PEIR).

9.1.6 The assessment presented is informed by the following technical chapters and appendixes:

- Volume 1, Chapter 8: Landscape and Visual Impact Assessment **[EN010147/APP/6.3]**;
- Volume 1, Chapter 10: Hydrology and Flood Risk **[EN010147/APP/6.3]**;
- Volume 1, Chapter 12: Traffic and Transport **[EN010147/APP/6.3]**; and
- Volume 1,Chapter 19 Air Quality **[EN010147/APP/6.3]**.

9.1.7 This chapter also draws upon information contained within the following ecological reports within Volume 3 of the ES **[EN010147/APP/6.5]**:

- Appendix 9.1: Desk Study;
- Appendix 9.2: Phase 1 Habitat Survey Report;
- Appendix 9.3: Hedgerow Survey Report;
- Appendix 9.4: Bat Survey Report;
- Appendix 9.5: Great Crested Newt Survey Report;

- Appendix 9.6 Invertebrate Survey Report;
- Appendix 9.7: Reptile Survey Report;
- Appendix 9.8: Badger Survey Report;
- Appendix 9.9: Breeding Bird Survey Report;
- Appendix 9.10: Wintering Bird Survey Report;
- Appendix 9.11: Dormouse Survey Report;
- Appendix 9.12: Arable Weeds Survey Report;
- Appendix 9.13: Biodiversity Net Gain Assessment Report;
- Appendix 9.14: Habitats Regulations Assessment Report; and
- Appendix 9.15: Veteran Tree Survey.

9.2 Legislative and Policy Context

Legislation

9.2.1 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)

9.2.2 European Union 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.

9.2.3 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.

9.2.4 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. 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.

9.2.5 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.

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

9.2.7 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).

9.2.8 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.

9.2.9 A Habitats Regulations Assessment for the Project has been completed (Appendix 9.14: Habitats Regulations Assessment Report).

The Wildlife and Countryside Act 1981 (as amended)

9.2.10 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.

9.2.11 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.

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

Countryside and Rights of Way (CRoW) Act 2000

9.2.13 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 Natural Environment and Rural Communities (NERC) Act 2006

9.2.14 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.

9.2.15 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

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

9.2.17 Schedule 15 of the Environment Act 2021 sets out provisions for biodiversity net gain and amends the Planning Act 2008 ('the Planning Act'). The Government's consultation on implementation of Schedule 15 indicated that a single 'core' Biodiversity Net Gain Assessment 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 November 2025.

9.2.18 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

9.2.19 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

9.2.20 All wild mammals are protected against intentional acts of cruelty under the Wild Mammals (Protection Act) 1996.

9.2.21 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.

Salmon and Freshwater Fisheries Act 1974

9.2.22 The Salmon and Freshwater Fisheries Act 1974 (as amended) is an Act to consolidate the Salmon and Freshwater Fisheries Act 1923 and certain other enactments relating to salmon and freshwater fisheries, and to repeal certain obsolete enactments relating to such fisheries.

9.2.23 The Act protects salmon and trout from poaching, vandalism, and neglect. It also aims to ensure proper licensing and water authority approval to sustain the inland freshwater fisheries industry.

The Hedgerow Regulations 1997

9.2.24 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.

9.2.25 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.

Eel Regulations 2009

9.2.26 The Eel Regulations 2009 implement in England and Wales Council Regulation (EC) No 1100/2007 establishing measures for the recovery of the stock of European eel.

9.2.27 In regard to development the Regulations further provide for the free passage of eels and enforcement.

The Water Environment (Water Framework Directive) Regulations 2017

9.2.28 The Water Environment Regulations 2017 (Water Framework Directive) (England and Wales) transpose the Water Framework Directive into UK law.

9.2.29 The Regulations protect surface waters including rivers, lakes, transitional waters (referred to in this advice as estuarine waters), coastal waters and groundwater.

The Convention on Biological Diversity

9.2.30 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.

9.2.31 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

9.2.32 During the COP15 meeting in December 2022, a new set of international goals for biodiversity was adopted called the Kunming-Montreal Global Biodiversity Framework (GBF). In total, 188 governments (including the UK) agreed to the GBF, 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.

Planning policy context

National Policy Statements

9.2.33 There are currently six designated energy National Policy Statements (NPSs), EN-1, EN-2, EN-3, EN-4, EN-5 and EN-6. The 2023 revised NPSs (EN-1 to EN-5) came into force on 17 January 2024. The 2011 version of the NPS for Nuclear Power Generation (EN-6) remains in force. The Department for Energy Security and Net Zero (DESNZ) are in the process of preparing a new version.

9.2.34 **Table 9.2.1** sets out a summary of the policies within these NPSs, relevant to ecology.

Table 9.2.1 Summary of designated NPS document requirements relevant to this chapter.

Summary of NPS Requirement	How and where considered in the ES
NPS EN-1	
In considering any proposed development, in particular when weighing its adverse impacts against its benefits, the Secretary of State should take into account: • its potential benefits including its contribution to meeting the need for energy infrastructure, job creation, reduction of geographical disparities, environmental enhancements, and any long-term or wider benefits; and • its potential adverse impacts, including on the environment, and including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts, following the mitigation hierarchy. (NPS EN-1 paragraph 4.1.5)	Ecological enhancements are presented in the Biodiversity Net Gain (BNG) Assessment prepared, using Natural England's Statutory Biodiversity Metric (Appendix 9.13 **[EN010147/APP/6.5]**). Mitigation and enhancement measures adopted as part of the project are presented in **Section 9.8**. Assessment of the potential impacts and subsequent effects of the Project relevant to ecology and nature conservation are considered in the technical sections and appendices of this chapter. Cumulative effects are considered in **Section 9.11** and **9.12**. The approach to mitigation is discussed in **Section 9.8.**
In this context, the Secretary of State should take into account environmental, social and economic benefits and adverse impacts, at national, regional and local levels. (NPS EN-1 paragraph 4.1.6)	The assessment methodology is presented in **Section 9.4** and assessment criteria in **Section 9.5**.
Applicants must apply the mitigation hierarchy and demonstrate that it has been applied. They should also seek the advice of the appropriate SNCB or other relevant statutory body when undertaking this process. Applicants should demonstrate that all residual impacts are those that cannot be avoided, reduced or mitigated. (NPS EN-1 paragraph 4.2.11)	The mitigation hierarchy has been applied throughout the technical sections and appendices of this chapter and is described in **Section 9.8**.
Applicants should set out how residual impacts will be compensated for as far as possible. Applicants should also set out how any mitigation or	The approach to mitigation for the Project is described in **Section 9.8**. An outline Landscape and Ecology Management Plan has been prepared

Summary of NPS Requirement	How and where considered in the ES
compensation measures will be monitored and reporting agreed to ensure success and that action is taken. Changes to measures may be needed e.g. adaptive management. The cumulative impacts of multiple developments with residual impacts should also be considered. (NPS EN-1 paragraph 4.2.12)	**[EN010147/APP/7.6.3]** and includes the necessary mitigation and enhancement measures for the Project with an adaptive management framework. Cumulative effects are considered in **Section 9.11** and **9.12**.
Where residual impacts relate to HRA or MCZ sites then the Applicant must provide a derogation case, if required, in the normal way in compliance with the relevant legislation and guidance. (NPS EN-1 paragraph 4.2.13)	The process of identifying designated sites has been undertaken and is described in the baseline environment **Section 9.6.** Designated sites are considered in the technical sections and appendices of this chapter.
This means that the Secretary of State will take as a starting point that CNP Infrastructure will meet the following, non-exhaustive, list of tests: • where development within a Green Belt requires very special circumstances to justify development; • where development within or outside a Site of Special Scientific Interest (SSSI) requires the benefits (including need) of the development in the location proposed to clearly outweigh both the likely impact on features of the site that make it a SSSI, and any broader impacts on the national network of SSSIs; • where development in nationally designated landscapes requires exceptional circumstances to be demonstrated; and • where substantial harm to or loss of significance to heritage assets should be exceptional or wholly exceptional. (NPS EN-1 paragraph 4.2.17)	The process of identifying designated sites has been undertaken and is described in the baseline environment **Section 9.6.** Designated sites are considered in the technical sections and appendices of this chapter.
The Regulations require an assessment of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, transboundary, short, medium, and long-term, permanent and temporary, positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects. (NPS EN-1 paragraph 4.3.1)	The assessment methodology is introduced in **Section 9.4**. Assessment of the potential impacts and subsequent effects of the Project relevant to ecology and nature conservation are considered in the technical sections and appendices of this chapter. The approach to mitigation is discussed in **Section 9.8**
To consider the potential effects, including benefits, of a proposal for a project, the applicant must set out information on the likely significant environmental, social and economic effects of the development, and show how any likely significant negative effects would be avoided, reduced, mitigated or compensated for, following the mitigation hierarchy. This information could include matters such as employment, equality, biodiversity	The assessment methodology is introduced in **Section 9.4**. Assessment of the potential impacts and subsequent effects of the Project relevant to ecology and nature conservation are considered in the technical sections and appendices of this chapter. The approach to mitigation is discussed in **Section 9.8**

Summary of NPS Requirement	How and where considered in the ES
net gain, community cohesion, health and well-being. (NPS EN-1 paragraph 4.3.4)	
For the purposes of this NPS and the technology specific NPSs the ES should cover the environmental, social and economic effects arising from pre-construction, construction, operation and decommissioning of the project. (NPS EN-1 paragraph 4.3.5)	The assessment methodology is introduced in **Section 9.4**. The project effects of construction, operation and maintenance and decommissioning relevant to ecology and nature conservation are assessed in the technical sections of this chapter.
Although achieving biodiversity net gain is not currently an obligation on applicants, Schedule 15 of the Environment Act 2021 contains provisions which, when commenced, mean the Secretary of State may not grant an application for a Development Consent Order unless satisfied that a biodiversity gain objective is met in relation to the onshore development in England to which the application relates. (NPS EN-1 paragraph 4.6.1)	A Biodiversity Net Gain (BNG) Assessment has been prepared (Appendix 9.13 **[EN010147/APP/6.5]**), using Natural England's Statutory Biodiversity Metric, demonstrating an overall gain of at least 70% Habitat BNG (**Section 9.8**).
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 (including those outside England), on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats. (NPS EN-1 paragraph 5.4.17)	The process of identifying designated sites, protected species and irreplaceable habitats has been undertaken and is described in the baseline environment **Section 9.6**. These entities are considered in the technical sections and appendices of this chapter.
The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests. (NPS EN-1 paragraph 5.4.19)	The existing baseline is presented in **Section 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8** and includes a BNG Assessment to be submitted as part of the ES, with a gain of at least 70% Habitat BNG**.**
Applicants should consider wider ecosystem services and benefits of natural capital when designing enhancement measures. (NPS EN-1 paragraph 5.4.20)	Enhancement measures considering wider ecosystem services and benefits of natural capital are considered in the Biodiversity Net Gain (BNG) Assessment (Appendix 9.13 and **Section 9.8**).
The design of energy Nationally Significant Infrastructure Project (NSIP) proposals will need to consider the movement of mobile/migratory species such as birds, fish and marine and terrestrial mammals and their potential to interact with infrastructure… (NPS EN-1 paragraph 5.4.22)	A number of surveys have been completed and reported in the ES **[EN010147/APP/6.5]**; including bird (Appendix 9.9 and 9.10), bat (Appendix 9.4), badger (Appendix 9.8), dormouse (Appendix 9.11). The desk study (Appendix 9.1) and **Section 9.6** identifies other species likely to occur within the Project site.
The applicant should seek the advice of the appropriate SNCB and provide the Secretary of State with such information as the Secretary of State may reasonably require, to determine whether an HRA Appropriate Assessment (AA) is required. Applicants can request and agree	The HRAR is provided within the ES (Appendix 9.14 Habitats Regulations Assessment Report) **[EN010147/APP/6.5]**.

Summary of NPS Requirement	How and where considered in the ES
'Evidence Plans' with SNCBs, which is a way to record upfront the information the applicant needs to supply with its application, so that the HRA can be efficiently carried out. If an AA is required, the applicant must provide the Secretary of State with such information as may reasonably be required to enable the Secretary of State to conduct the AA. This should include information on any mitigation measures that are proposed to minimise or avoid likely significant effects. (NPS EN-1 paragraph 5.4.25)	
Applicants should include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both construction and operational phases. (NPS EN-1 paragraph 5.4.32)	The approach to mitigation for the Project at the ES stage is described in **Section 9.8**.
Consideration should be given to improvements to, and impacts on, habitats and species in, around and beyond developments, for wider ecosystem services and natural capital benefits, beyond those under protection and identified as being of principal importance. This may include considerations and opportunities identified through Local Nature Recovery Strategies, and national goals and targets set through the Environment Act 2021 and the Environmental Improvement Plan 2023. (NPS EN-1 paragraph 5.4.34)	The existing baseline is presented in **Section 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8**. Enhancement measures are considered in the Biodiversity Net Gain (BNG) Assessment (Appendix 9.13 **[EN010147/APP/6.5]**).
Applicants should include appropriate avoidance, mitigation, compensation and enhancement measures as an integral part of the proposed development. (NPS EN-1 paragraph 5.4.35)	The approach to mitigation for the Project at the ES stage is described in **Section 9.8**.
Applicants should produce and implement a Biodiversity Management Strategy as part of their development proposals. This could include provision for biodiversity awareness training to employees and contractors so as to avoid unnecessary adverse impacts on biodiversity during the construction and operation stages. (NPS EN-1 paragraph 5.4.36)	The approach to mitigation at the ES stage is described in **Section 9.8**. An outline Landscape and Ecology Management Plan **[EN010147/APP/7.6.3]** and Code of Construction Practice **[EN010147/APP/7.6.1]** include the necessary mitigation and enhancement measures for the Project to avoid unnecessary adverse impacts on biodiversity during the construction and operation stages.
NPS EN-3	
The applicant's ecological assessments should identify any ecological risk from developing on the proposed site. (NPS EN-3 paragraph 2.10.76)	The existing baseline is presented in **Section 9.6**. The assessment criteria is addressed in **Section 9.5**.
The applicant should use an advising ecologist during the design process to ensure that adverse impacts are avoided, minimised or mitigated in line	The RPS Ecology team were involved in the design process. The approach to mitigation and for the Project at the ES stage is described in **Section 9.8**. Enhancement measures are considered in the

Summary of NPS Requirement	How and where considered in the ES
with the mitigation hierarchy, and biodiversity enhancements are maximised. (NPS EN-3 paragraph 2.10.78)	Biodiversity Net Gain (BNG) Assessment (Appendix 9.13).
The assessment may be informed by a 'desk study' of existing ecological records, an evaluation of the likely impacts of the solar farm upon ecological features, and should specify mitigation to avoid or minimise these impacts, and any further surveys required. (NPS EN-3 paragraph 2.10.79)	The desk study is provided in the ES (Appendix 9.1) and the assessment of impacts is addressed in **Section 9.9.** The approach to mitigation and for the Project at the ES stage is described in **Section 9.8**.
Applicants should consider earthworks associated with construction compounds, access roads and cable trenching. (NPS EN-3 paragraph 2.10.80)	Specific locations of construction compounds, access roads and trenching are set out in the Project Description (Chapter 6). As standard, the Applicant would seek to ensure relevant ecological receptors are safeguarded. Measures to protect ecology during construction works are set out in the Code of Construction Practice **[EN010147/APP/7.6.1]**.
Applicants should consider how security and lighting installations may impact on the local ecology. Where pole mounted CCTV facilities are proposed the location of these facilities should be carefully considered to minimise impact. If lighting is necessary, it should be minimised and directed away from areas of likely habitat. (NPS EN-3 paragraph 2.10.82)	Assessment of the potential impacts of the Project on ecology and nature conservation are considered in **Section 9.9**. The approach to mitigation is described in **Section 9.8**, and includes a construction artificial light emissions plan set out in the Code of Construction Practice **[EN010147/APP/7.6.1]**. The CoCP includes methods to minimise impacts to wildlife.
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. Buffer strips between perimeter fencing and hedges may be proposed, and the construction and design of any fencing should account for enabling mammal, reptile and other fauna access into the site if required to do so in the ecological report. (NPS EN-3 paragraph 2.10.83)	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 has been considered.
Where a Flood Risk Assessment has been carried out this must be submitted alongside the applicant's ES. This will need to consider the impact of drainage. As solar PV panels will drain to the existing ground, the impact will not, in general, be significant. (NPS EN-3 paragraph 2.10.84)	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.
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. (NPS EN-3 paragraph 2.10.86)	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.
Solar farms have the potential to increase the biodiversity value of a site, especially if the land was previously intensively managed. In some instances, this can result in significant benefits and	The Project is aiming to achieve at least 70% Habitat BNG (**Section 9.8**) (ES Appendix 9.13).

Summary of NPS Requirement	How and where considered in the ES
enhancements beyond Biodiversity Net Gain, which result in wider environmental gains which is encouraged. (NPS EN-3 paragraph 2.10.89)	
For projects in England, 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. (NPS EN-3 paragraph 2.10.90)	An outline Landscape and Ecology Management Plan (oLEMP) is provided **[EN010147/APP/7.6.3]**. This sets out the enhancement, management and monitoring of biodiversity for the Project.
This might include maintaining or extending existing habitats and potentially creating new important habitats, for example by installing cultivated strips/plots for rare arable plants, rough grassland margins, bumble bee plant mixes, and wild bird seed mixes. (NPS EN-3 paragraph 2.10.129)	An outline Landscape and Ecology Management Plan (oLEMP) is provided **[EN010147/APP/7.6.3]**. This includes the details of habitat creation for a range of habitats, included rough grass margins, meadows and other priority habitats.
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. (NPS EN-3 paragraph 2.10.130)	The approach to mitigation and for the Project at the ES stage is described in **Section 9.8**. An outline Landscape and Ecology Management Plan (oLEMP) is provided **[EN010147/APP/7.6.3]** and includes the necessary mitigation and enhancement measures for the Project including likely monitoring for the relevant ecological receptors.
NPS EN-5	
When planning and evaluating the proposed development's contribution to environmental and biodiversity net gain, it will be important – for both the applicant and the Secretary of State – to supplement the generic guidance set out in EN-1 (Section 4.5) with recognition that the linear nature of electricity networks infrastructure can allow for excellent opportunities to: reconnect important habitats via green corridors, biodiversity stepping zones, and reestablishment of appropriate hedgerows; and/or connect people to the environment, for instance via footpaths and cycleways constructed in tandem with environmental enhancements. (NPS EN-5 paragraph 2.5.1)	The Illustrative Masterplan for the Project in Volume 2 of the ES **[EN010147/APP/6.4]** sets out the Ecology Strategy for the Project. It effectively makes use of existing and proposed linear infrastructure for green corridors, stepping zones and the reinforcing/establishment of hedgerows.

The National Planning Policy Framework

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

9.2.36 **Table 9.2.2** sets out a summary of the NPPF policies relevant to this chapter.

Table 9.2.2: Summary of NPPF requirements relevant to this chapter

Policy	Key Provisions	How and where considered in the ES
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 ES stage is discussed in **Section 9.8.** A BNG Assessment is submitted as part of the ES (Appendix 9.13) with gain of at least 70% Habitat BNG.
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 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8.**

9.2.37 The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2024) supports the NPPF and provides guidance across a range of topic areas. Relevant to this chapter is the guidance set out in relation to Biodiversity Net Gain, Habitat Regulations Assessment (HRA) and EIA (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2021-2024). These sections offer guidance to inform the accurate assessment of impacts from the Project.

9.2.38 The guidance states that the planning system should conserve and enhance the natural and local environment and requires local planning authorities to consider the opportunities that proposed developments may provide to conserve and enhance biodiversity and contribute to habitat connectivity in the wider area.

Local planning policy

9.2.39 The relevant local planning policies applicable to Ecology based on the extent of the study areas for this assessment are summarised in **Table 9.2.3**.

Table 9.2.3: Summary of local planning policy relevant to this chapter

Policy	Key Provisions	How and where considered in the ES
West Oxfordshire District Council		
West Oxfordshire District Council Local Plan 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 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8.** The assessment of impacts is addressed in **Section 9.9**. A BNG Assessment is submitted as part of the ES (Appendix 9.13) utilising the Statutory Biodiversity Metric Calculation Tool.
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 ES stage is discussed in **Section 9.8.** The a construction artificial light emissions plan is set out in CoCP **[EN010147/APP/7.6.1]** and includes methods to minimise lighting impacts to wildlife.
Cherwell District Council		
Cherwell District Council Adopted Cherwell Local Plan 2011-2031 (Part 1)		

Policy	Key Provisions	How and where considered in the ES
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 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8.** The assessment of impacts is addressed in **Section 9.9.** A BNG Assessment is submitted as part of the ES (Appendix 9.13) utilising the Statutory Biodiversity Metric Calculation Tool. An outline Landscape and Ecology Management Plan (oLEMP) is submitted as part of the ES **[EN010147/APP/7.6.3]** and includes the necessary management and monitoring of biodiversity features for the Project.
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 existing baseline is presented in **Section 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8**. The assessment of impacts is addressed in **Section 9.9.** A BNG Assessment is submitted as part of the ES (Appendix 9.13), with a gain of at least 70% Habitat BNG.
Vale of White Horse District Council		
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;	The existing baseline is presented in **Section 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8.** The assessment of impacts is addressed in **Section 9.9**. A

Policy	Key Provisions	How and where considered in the ES
	• 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.	BNG Assessment is submitted as part of the ES (Appendix 9.13), with a gain of at least 70% Habitat BNG.
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 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8.** The assessment of impacts is addressed in **Section 9.9**. A BNG Assessment is submitted as part of the ES (Appendix 9.13), with a gain of at least 70% Habitat BNG.
Cumnor Neighbourhood Development Plan		
Policy RNE1 – Green Infrastructure	• Proposals should protect, and where practicable enhance, valued landscapes, sites of biodiversity or geological value and soils in a manner commensurate with their statutory status or identified quality in the development plan, and minimise impacts on, and providing net gains for, biodiversity where practicable. • Proposals should maintain and enhance existing on-site biodiversity assets and provide for wildlife needs on site where practicable. On-site biodiversity enhancements will be supported as will proposals that provide wildlife corridors allowing wildlife to move from one area of habitat to another.	The existing baseline is presented in **Section 9.6**. The approach to mitigation at the ES stage is discussed in **Section 9.8.** The assessment of impacts is addressed in **Section 9.9**. A BNG Assessment is submitted as part of the ES (Appendix 9.13), with a gain of at least 70% Habitat BNG.

9.3 Consultation and Engagement

9.3.1 On 15 June 2023, the Applicants submitted a Scoping Report to the Planning Inspectorate, 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.

9.3.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion on 24 July 2023. Key issues raised during the scoping process specific to ecology and nature conservation are listed in **Table 9.3.1**, together with details of how these issues have been addressed within the ES.

Table 9.3.1: Summary of scoping responses

Comment	How and where considered in the ES
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	A range of ecology surveys have been undertaken and are presented in Appendix 9.1-9.15 of this ES.
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 9.8: Badger Survey of the ES.
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 ES (**Section 9.9**).
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	Both the use of construction compounds and creation of mitigation areas are included within the construction activities assessed (through habitat loss, for example, **Section 9.9**).

Comment	How and where considered in the ES
mitigation areas on designated sites. This matter should be assessed in the ES where significant effects are likely to occur.	
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 INNS is included within the ES (**Section 9.9**).
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 ES in Appendix 9.14 Habitats Regulations Assessment Report. Impacts to all designated sites within the study area (**Table 9.6.2**) are also considered within the ES (**Section 9.9**).
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, this is set out within the ES. Surveys for a range of ecology receptors have been undertaken including: • Phase 1 Habitat Survey (Appendix 9.2); • Hedgerows (Appendix 9.3); • Bats (Appendix 9.4); • Great crested newt (Appendix 9.5); • Invertebrates (Appendix 9.6); • Reptiles (Appendix 9.7); • Badgers (Appendix 9.8); • Breeding birds (Appendix 9.9); • Wintering birds (Appendix 9.10); • Dormice (Appendix 9.11); • Arable Weeds (Appendix 9.12); and • Veteran Trees (Appendix 9.15).
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	All such features would be protected by a suitable buffer zone including 8 m to watercourses and 15 m to ancient woodland. Buffer zones will be implemented through both site design and the CoCP/LEMP and secured by appropriate Requirement.

Comment	How and where considered in the ES
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.	The location of veteran and ancient trees is set out in Appendix 9.15.
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.	The location of veteran and ancient trees is set out in Appendix 9.15.
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 ES.
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.
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.	A BNG Assessment is submitted as part of the ES (Appendix 9.13) utilising the Statutory Biodiversity Metric Calculation Tool. The Project site (including grasslands and hedgerows) will be managed as per the oLEMP **[EN010147/APP/7.6.3]**, to be secured by appropriate Requirement. Surveys have been scoped where there is potential for impacts to species of conservation concern. These are reported within Appendix 9.1-9.15 of the ES. Where no impacts are likely and surveys scoped out, the rationale for this is set out within the ES. Impacts to birds are considered within **Section 9.9**, including skylark. Surveys for barn owl have been completed and are reported in the ES (Appendix 9.9).
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.	Deer and foxes are not species of conservation interest and, as such, are not considered within the assessment. Impacts to ancient woodland and

Comment	How and where considered in the ES
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.	other receptors from the presence of the Project are assessed within **Section 9.9** of the ES.
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 dormice and wintering birds have been completed and are reported in Appendix 9.10 and Appendix 9.11 of the ES. Both direct and indirect impacts during decommissioning have been considered in **Section 9.9** 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.	Direct loss of habitats within designated sites is included as a potential impact within the ES. Wintering bird surveys have also been conducted (Appendix 9.10 of the ES), and are included as a receptor within the ES recognising the importance of the area for wintering birds.

Comment	How and where considered in the ES
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.	
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 site have been protected with appropriate buffers. This includes a large area along the River Evenlode where floodplain meadow will be established.
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.	No direct impacts to water courses are anticipated and, as such, no watercourse-based assessments have been completed for BNG etc.
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 Statutory BNG Metric has been used to demonstrate net gain. It is intended that the Project will have a gain of at least 70% Habitat BNG. Full details are set out in Appendix 9.13. The oLEMP **[EN010147/APP/7.6.3]** will act as a mechanism to record & monitor ecological data on created, or evolving habitats, during the operation of the Project.
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.	No surveys for water vole have been completed 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 (**Section 9.8**). As such, no impacts from crossings are anticipated.
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	The landscape scheme for the Project has been specifically designed to enhance the River Evenlode corridor which it is anticipated will also help to improve the water quality of the river through the

Comment	How and where considered in the ES
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.	removal of agricultural run off from the surrounding farmland.
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 will be retained and protected with appropriate buffers. As such, no severance impacts are anticipated. The Defra Statutory BNG Metric has been used to demonstrate net gain. It is intended that the Project will achieve a gain of at least 70% Habitat BNG. Full details are set out in Appendix 9.13.
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	Impacts to Oxford Meadows SAC are considered in Appendix 9.14 Habitats Regulations Assessment Report. This includes with respect to hydrology and air pollution.

Comment	How and where considered in the ES
required as detailed in the Habitats and Species Regulations 2017.	
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 **Section 9.9** of the ES.
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 **Section 9.9** of the ES. 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 **Section 9.9** of the ES.
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 NRN has been used to guide the location of habitat creation and strategic habitat linkages. Details are set out in Appendix 9.13 Biodiversity Net Gain Assessment.
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	The potential for impacts to European designated sites is considered within Appendix 9.14 Habitats Regulations Assessment Report.

Comment	How and where considered in the ES
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 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 **Section 9.9** of the ES.
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 the ES should 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 within **Section 9.9** of the ES.
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	A full suite of appropriate surveys have been undertaken on site during 2022-24, presented in Appendix 9.1 to 9.15 of the ES.

Comment	How and where considered in the ES
carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.	
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 2022-2024, presented in Appendix 9.1 to 9.15 of the ES. Additional surveys are on-going and will be reported when complete.
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 ES 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 IEF and is assessed within **Section 9.9** of the ES.
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 **Section 9.9** of the ES.
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	The Illustrative Masterplan for the Project in Volume 2 of the ES **[EN010147/APP/6.4]** has been designed with the aim of achieving a gain of at least 70% Habitat BNG. This is set out in Appendix 9.13 Biodiversity Net Gain Assessment.

Comment	How and where considered in the ES
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.	

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 (**Section 9.8**). Surveys for badger, dormouse and botanical work have been completed and are reported Appendix 9.2, 9.8, 9.11 and 9.12 of the ES. An assessment of the potential effects on the Oxford Meadows SAC is included within the Appendix 9.14 Habitats Regulations Assessment Report. The Illustrative Masterplan for the Project in Volume 2 of the ES **[EN010147/APP/6.4]** has been designed with the aim of achieving at least 70% Habitat BNG. This is set out in Appendix 9.13 Biodiversity Net Gain Assessment.

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	No significant areas of woodland have been included within the Project boundary. 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. This is implemented under Appendix 9.13 Biodiversity Net Gain Assessment.

Comment	How and where considered in the ES
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.	
Para 7.3.8 We recommend the use of eDNA for Greater Crested Newt surveys.	eDNA surveys have been undertaken and are reported in Appendix 9.4 GCN Survey Report.
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) and other guidance referenced has been used to help inform the final Ecology Strategy for the site (as set out in the Outline Landscape and Ecology Management Plan (oLEMP) **[EN010147/APP/7.6.3]**).
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 2022-24, presented in Appendix 9.1 to 9.15 of the ES. Additional surveys are on-going and will be reported when complete.
Request from parishioner re impact on Long Mead Meadow - a LWS near Eynsham - site should be considered specifically.	Long Mead Meadow has been removed from within the Project site with the proposed HDD (**Section 9.8**) now to the north of the Swinford Crossing in order to ensure no impacts to the LWS.
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 and assessed within **Section 9.9**, although they are to be retained with appropriate buffers (**Section 9.8**).
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 Appendix 9.2 Phase 1 Habitat Survey of the ES.
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	Impacts to Oxford Meadows SAC are considered in Appendix 9.8 Habitats Regulations Assessment Report.

Comment	How and where considered in the ES
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 areas of woodland outside the Project site are considered within the ES (**Section 9.9**). Impacts to the Long Mead LWS are considered in the ES, although this site has been removed from the Project during more detailed design following consultation (**Section 9.9**).
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 Appendix 9.10 of the ES. The majority of habitat that could be used by dormice has been protected. Surveys with respect to this species are reported in Appendix 9.11 Dormouse Survey Report. Impacts to both receptors are considered within the ES (**Section 9.9**).
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. As small areas of hedgerow are to be removed and dormice have been identified on site, a suitable licence from Natural England will be necessary and will be sought at the appropriate time.
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	The Project has been designed to avoid impacts to the LWS through the amendment to HDD locations around the Swinford Crossing which will now take place away from the LWS. It is intended to HDD

Comment	How and where considered in the ES
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.	beneath the LWSs to ensure there is no direct habitat loss.
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 reported in Appendix 9.2 Phase 1 Habitat Survey. Presence of LWSs are considered within the ES (**Section 9.9**).
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 Nature Recovery Network has been used to inform the Illustrative Masterplan for the Project in Volume 2 of the ES **[EN010147/APP/6.4]**, in particular with respect to the corridor along the River Evenlode. Details are set out in Appendix 9.13 Biodiversity Net Gain Assessment.
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.	All designated sites within the Zone of Influence (ZoI) have been considered in the ecology chapter of the ES. The Project has been designed to avoid impacts to the LWS through the amendment to HDD locations around the Swinford Crossing which will now take place away from the LWS. It is intended to HDD beneath the LWSs to ensure there is no direct habitat loss.

Comment	How and where considered in the ES
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.	
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 woodland will be removed as part of the Project. Small lengths of hedgerow are to be removed as part of the Project to facilitate access. 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 Appendix 9.9 and 9.10 of the ES.
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 (EN 2001) are 500 m. 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.
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 ES (Appendix 9.9 and 9.10).
Hanborough Parish Council	
Scoping assessment will be made of the 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	All designated sites within the ZoI are considered. Brown hare are also considered as they are a Species of Principal Importance. Deer and rabbit are not considered as specific receptors but will be protected during construction as far as practicable, according to best practice.

Comment	How and where considered in the ES
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.	

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

9.3.4 The PEIR was issued to inform the statutory consultation carried out on the Project between 30 November 2023 and 8 February 2024. It presented the preliminary findings of the EIA process for the Project at that time. The consultation responses specific to the Ecology chapter and the way in which they have been taken into account in this ES chapter are set out in **Table 9.3.2** below.

9.3.5 A summary of the key issues raised during consultation activities undertaken to date is presented in Appendix 9.16: Section 42 Consultation Responses **[EN010147/APP/6.5]** together with how these issues have been considered in the production of this ES chapter.

Table 9.3.2 Summary of consultation relevant to this chapter.

Date	Consultee and type of response	Issues Raised	How and where considered in the ES
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	Survey results in **Section 9.6,** assessment of effects in **Section 9.9**, mitigation detailed in **Section 9.8**.
5th February 2024	Natural England	Review of Project findings Approach to BNG Impact of solar farms on bats	BNG approach set out in Appendix 9.13 Biodiversity Net Gain Assessment. Approach to bat surveys set out in Appendix 9.4 Bat Surveys.
10th April 2024	Natural England	Bat survey methodology BNG	BNG approach set out in Appendix 9.13 Biodiversity Net Gain Assessment. Approach to bat surveys set out in Appendix 9.4 Bat Surveys.
1st August 2024	Host LPA Ecologists	Introduction to Project and overview of work to date. Surveys completed and key results. Emerging effects and mitigation	Survey results in **Section 9.6,** assessment of effects in **Section 9.9**, mitigation detailed in **Section 9.8**.
11th September 2024	Natural England	Survey results Evenlode corridor	Survey results in **Section 9.6,** assessment of effects in **Section 9.9**, mitigation detailed in **Section 9.8.** Principals of Evenlode corridor set out in the oLEMP **[EN010147/APP/7.6.3]**.
19th September 2024	Host LPA Ecologists	Survey results Evenlode corridor	Survey results in **Section 9.6,** assessment of effects in **Section 9.9**, mitigation detailed in **Section 9.8.** Principals of Evenlode corridor set out in the oLEMP **[EN010147/APP/7.6.3]**.

9.4 Assessment Methodology

Relevant Guidance

9.4.1 The following guidance documents have been considered as part of the Ecological Impact Assessment (EcIA) presented in this chapter:

- CIEEM guidelines on ecological impact assessment (CIEEM, 2018); and
- British Standards Institution (2013) Biodiversity – Code of Practice for Planning and Development: BS 42020:2013.

Scope of the Assessment

9.4.2 The scope of this ES has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 9.3.1**, Error! Reference source not found. and Error! Reference source not found..

9.4.3 Taking into account the scoping and consultation process, **Table 9.4.1** summarises the issues considered as part of this assessment.

Table 9.4.1: 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), reduction in habitat connectivity. 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), reduction in habitat connectivity, 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 (eg 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.

Activity	Potential effects scoped into the assessment
	Effects on species as a result of 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).
Installation of cables	Effects on habitats, including ancient woodland, as a result of installation of cables (eg habitat loss, habitat disturbance (eg 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, changes in connectivity).
	Effects on habitats through changes in size.

9.4.4 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 9.4.2**.

Table 9.4.2: Issues scoped out of the assessment

Issue	Justification
Construction and Decommissioning Phase	
Changes in hydrology	The Project will remain greenfield during construction with no significant change in the impermeable area across the site, as such, there will be no change in the hydrology regimes experienced by ecological receptors during construction.
Operational Phase	
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 will remain greenfield during operation with no significant change in the impermeable area across the site, as such, there will be no change in the hydrology regimes experienced by ecological receptors during operation.

9.4.5 As set out in Chapter 5: Alternatives Considered of the ES **[EN010147/APP/6.3]**, there are four locations where alternative cable routes

were possible within the cable corridors between Site Areas. The different options are shown in Figure 2.4a – 2.4d of Volume 2 of the ES **[EN010147/APP/6.4].** Each option has been assessed in section to determine the worst case (described in Section 9.7 below) and then this worst case taken forward for assessment as appropriate.

Study area

9.4.6 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.

Designated Sites and Habitats

9.4.7 A study area up to 10 km beyond the Project site was used to search for international designated sites and 5 km beyond the Project site for national designated sites. The study areas were chosen following consultation with Natural England. International designated sites include Special Protection Areas (SPA), Special Areas of Conservation (SAC), Candidate SACs (cSAC), potential SPAs (pSPA) and Ramsar sites. Nationally statutory designated sites of national importance include Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR). Statutory designated sites of local importance include Local Nature Reserves (LNR).

9.4.8 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 Local Wildlife Sites (LWS), Conservation Target Area (CTA), County Wildlife Site (CWS), District Wildlife Site (DWS), Proposed District Wildlife Site (PDWS) and Local Wildlife Site (LWS) (these are described in **Section 9.6**) HPIs include those listed in Section 41 of the NERC Act.

Protected and Notable Species

9.4.9 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 during pre-submission consultation.

9.4.10 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 great crested newt, bats and birds. Therefore, the study area includes (where necessary) water bodies within 500 m outside the site boundary (in accordance with Natural England guidelines for GCN survey, EN 2001) if they are considered to support relevant species.

Zone of Influence

9.4.11 The study areas for designated sites, habitats and species have been used to determine the Zone of Influence (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.

Methodology for Baseline Studies

Desk studies

9.4.12 Information on ecology and nature conservation within the desk study search area was collected for the ES during 2024. The desk study obtained information relating to statutory and non-statutory nature conservation sites, priority habitats and species, and legally protected and controlled species. A review of existing studies and datasets was also undertaken.

9.4.13 Details of the organisations and individuals contacted to obtain ecological data are provided in Appendix 9.1: Desk Study, and comprised:

- Thames Valley Environmental Records Centre (TVERC, 2024);
- Multi Agency Geographic Information for the Countryside (MAGIC, 2024);
- Joint Nature Conservation Committee (JNCC, 2024) website;
- Local plans requested from Cherwell District Council, West Oxfordshire district Council and Vale of White Horse District Council;
- Woodland Trust Ancient Tree Inventory (Woodland Trust, 2024); and
- 1:25,000 OS mapping.

Site-specific surveys

9.4.14 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;
- Hedgerow survey;
- Bat activity survey including radio tracking;
- Bat roost assessment;
- Great crested newt survey;
- Invertebrate survey;
- Reptile survey
- Badger survey;
- Breeding bird survey (including barn owl survey);
- Wintering bird survey;

- Dormouse survey;
- Arable weeds survey; and
- Veteran tree survey.

9.4.15 A summary of the methodologies used is provided below, with further details and plans showing survey areas provided in the relevant appendices (Appendix 9.2 to Appendix 9.15).

9.4.16 surveys for all species groups will be updated, pre-commencement to ensure that an up to date baseline is available at the time immediately prior to construction work commencing Details of the timings of surveys would be set out in the outline Code of Construction Practice (oCoCP), to be secured via a Requirement within the DCO, as referenced in **Table 9.8.1**.

9.4.17 As the Project evolved and design became more refined, the site boundary became smaller. As such, the surveyed areas reflected the site boundary present at the time the initial surveys were undertaken. The survey results are considered representative as they fully encompass the current Project site boundary but also consider habitats immediately adjoining and well connected to it. The survey results are therefore considered robust. This is reflected in the descriptions below.

Phase 1 Habitat Survey

9.4.18 Phase 1 Habitat Surveys were in accordance with the standard methodology set out in the Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 Habitat Survey - a technique for environmental audit (JNCC, 2010).

9.4.19 The Phase 1 Habitat Surveys were undertaken between May 2022 and July 2024. All broad habitat types recorded within the Phase 1 habitat survey area were categorised and mapped as set out in JNCC 2010.

9.4.20 The extended Phase 1 Habitat Surveys also identified habitats of potential value to legally protected or notable species. Signs of legally protected or notable species were recorded, including sightings, tracks, droppings and burrows.

9.4.21 Further details of the methodologies used are provided in Appendix 9.2: Phase 1 Habitat Survey Report which also includes plans showing survey areas and survey limitations.

Hedgerows

9.4.22 Hedgerows to be impacted by the Project were assessed to establish which hedgerows (if any) would qualify as ecologically ‘Important’ under the Hedgerow Regulations 1997.

9.4.23 Surveys were undertaken from October to November 2023 and June to July 2024. The Hedgerows Regulations surveys followed the methods defined in the Department for Environment, Food & Rural Affairs (Defra) Hedgerow Survey Handbook (Defra, 2007).

9.4.24 In accordance with the requirements of the Hedgerow Regulations 1997, each hedgerow scoped in for a Hedgerow Regulations survey was assessed to

determine if it was classed as ‘important’ or ‘not important’ in relation to ecological importance.

9.4.25 The survey involved recording the ecological information number of woody species located along at least one typical 30 m section of each hedgerow. For hedgerows 30 m or less in length the whole hedgerow was surveyed. For hedgerows between 30 m and 100 m in length the central 30 m was surveyed. For hedgerows between 100 m to 200 m the hedgerow was divided in two and each central 30 m section surveyed. For hedgerows over 200 m in length and recording information as defined in the Hedgerow Survey Handbook (Defra, 2007). The hedgerow was divided into three sections and the central 30 m of each section surveyed.

9.4.26 Hedgerows were considered ecologically ‘important’ if they were at least 30 years old and met one of a number of criteria. Further details of the methodologies used are provided in Appendix 9.3 Hedgerows, which also includes plans showing survey areas and survey limitations.

Bat Activity

9.4.27 Static activity surveys were undertaken between the months of April and October inclusive during 2022 and 2023, in areas of the site determined to be most suitable identified during Phase 1 surveys, Preliminary Bat Roost Assessments, and desk studies or in high-value habitats due to be significantly affected by the proposed works.

9.4.28 Static bat detectors were deployed at nine locations in 2022 and five locations across the central area of the site in 2023. Detectors were placed in areas suitable for bat foraging and commuting such as woodland edges, hedgerows, and by rivers.

9.4.29 Static bat detectors were deployed once or twice per month for periods of at least five consecutive nights that could be increased depending on weather conditions and previously deployments in a month. However, it should be noted that technical issues and other confounding factors lead to the five-night minimum not being possible on a few occasions.

9.4.30 The detectors were setup to automatically begin recording at least 15 minutes before sunset and at least two hours after in the evening, as well as at least two hours before sunrise and at least 15 minutes after sunrise in the morning.

9.4.31 Anabat Swift and Batlogger A+ bat detectors were used and configured to record at full spectrum, using settings deemed suitable for detecting all UK bat species.

9.4.32 In addition, a range of advanced bat survey techniques were used to ensure that the baseline with respect to the presence of rare bats, including Bechstein’s and barbastelle were used. This included a combination of walked transects and trapping/radio tracking.

9.4.33 Full details of the methodologies used, including the location of detectors and traps, are provided in Appendix 9.4: Bat Activity Survey Report which also includes plans showing survey areas.

Great Crested Newt

9.4.34 All accessible waterbodies within the Project site and within 500 m of the Project site boundary were initially subject to a Habitat Suitability Index (HSI) assessment (Oldham *et al*. 2000) in 2022 and 2024.

9.4.35 All water bodies scoring average or higher on the HSI assessment, were physically accessible and where access was permitted, were then subject to environmental DNA (eDNA) surveys to confirm presence or likely absences of GCN between 15th April and 30th June 2022 and 2024.

9.4.36 Traditional population estimate surveys were also undertaken between April and June in 2022 and 2024 using a combination of egg searching, bottle trapping, netting and torch counts following standard methodologies (English Nature, 2001).

9.4.37 Further details of the methodologies used are provided in Appendix 9.5: Great Crested Newt Survey Report which also includes plans showing survey areas and survey limitations.

Terrestrial Invertebrates

9.4.38 An invertebrate scoping survey was undertaken on the Project site, noting areas of moderate and high invertebrate potential. Areas of moderate or high invertebrate potential were then subject to detailed invertebrate assemblage surveys.

9.4.39 Invertebrate assemblage surveys were undertaken in June and September 2022, and August 2024 . The surveys comprised a series of timed samples that followed methodologies defined in Surveying Terrestrial and Freshwater Invertebrates for Conservation Evaluation (Drake *et al*., 2007). Surveys utilised a variety of search techniques, including sweep-netting, hand searching, spot searching and netting of flying insects. Habitats of value for invertebrates were evaluated and notes were taken on their structure, diversity and species assemblage.

9.4.40 Further details of the methodologies used are provided in Appendix 9.6: Invertebrates which also includes plans showing survey areas and survey limitations.

Reptiles

9.4.41 A reptile scoping survey of the Project site was undertaken in March 2022 to identify habitats with the potential to support reptiles.

9.4.42 Habitats suitable for reptiles underwent artificial refugia surveys in September to October 2022 and April to September 2023 following the recommended methodology described in the Herpetofauna Worker's Manual (Gent & Gibson, 2003) and Froglife's Surveying for Reptiles (Froglife, 2016).

9.4.43 The reptile survey was conducted using artificial refuges made from roofing felt measuring 50 cm x 50 cm and 50 cm x 100 cm.

9.4.44 At the completion of surveys an estimate of the population size for all reptile species present was made with reference to guidance published by Froglife (1999).

9.4.45 Further details of the methodologies used are provided in Appendix 9.7: Reptile Survey Report which also includes plans showing survey areas and any survey limitations.

Badgers

9.4.46 The field survey for badger covered all areas of suitable and accessible habitat within the Project site and up to 30 m outside of the Project site.

9.4.47 A search for badger field signs within the Site was undertaken April and July 2022. The survey comprised a site walkover of all suitable and accessible habitat to search for field signs of badger and in particular, setts.

9.4.48 The level of use and was classified and setts were classified as one of four main types following the criteria in the Mammal Society Surveying Badgers (Harris, Cresswell and Jefferies, 1989).

9.4.49 Further details of the methodologies used are provided in confidential Appendix 9.8: Badger Survey Report which also includes plans showing survey areas and any survey limitations.

Breeding Birds

9.4.50 The site was subject to a breeding bird survey in April 2022, between April and July 2023, and between April and July 2024 to ensure that two complete breeding bird seasons were surveyed. 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).

9.4.51 Suitable optical equipment was used to observe bird behaviour and all accessible parts of the survey area were approached to within 50-100m (but excluded the centre of the fields). All species encountered within the survey area were recorded and mapped.

9.4.52 In addition, surveys for barn owl were completed during 2023 and 2024. Data with respect to barn owl nest locations have been kept confidential for bird welfare reasons.

9.4.53 Full details of the survey area are set out in Appendix 9.9: Breeding Bird Survey Report which also includes plans showing survey areas and any survey limitations.

Wintering Birds

9.4.54 The Project site was subject to a wintering bird survey, comprising six visits between October 2022 and March 2023 as well as another six visits between October 2023 and March 2024, i.e. two full seasons. The surveys were based on a standard ‘walkover’ methodology as outlined in Gilbert *et al*. (1998) and Bibby *et al*. (2000).

9.4.55 On completion of the surveys, analysis maps were produced for each species afforded special protection or of conservation interest, consisting of all registrations recorded during the survey.

9.4.56 Full details of the survey area are set out in Appendix 9.10 Wintering Bird Survey Report which also includes plans showing survey areas and any survey limitations.

Dormouse

9.4.57 The hedgerows to be impacted by the Project were subject to dormouse surveys during 2024. A dormouse nest tube survey was undertaken based on methodology and best practice guidelines set out in the Dormouse Conservation Handbook, second edition (Bright, Morris and Mitchell-Jones, 2006). Survey visits were undertaken regularly in suitable weather conditions between May and September 2024.

9.4.58 Full details of the survey area are set out in Appendix 9.11 Dormouse Survey Report which also includes plans showing survey areas and any survey limitations.

Arable Weeds

9.4.59 The arable weed surveys followed the methodology as outlined in Plantlife (2019). The survey covered Site Areas 1-8, 16 and Denmans. Arable weed surveys were undertaken in July and August 2024 during optimal conditions for survey.

9.4.60 On completion of the surveys, analysis maps were produced for each species afforded special protection or of conservation interest, consisting of all registrations recorded during the survey. From the species maps, the number of birds present during each survey visit was calculated.

9.4.61 The arable weeds survey, and the assessment of site eligibility for designation as a Local Wildlife Site, was completed by suitably experienced botanists.

9.4.62 Full details of the survey area are set out in Appendix 9.12 Arable Weeds Survey Report which also includes plans showing survey areas and any survey limitations.

Veteran Trees

9.4.63 The methodology used was in compliance with the Veteran Tree Initiative Specialist Survey Method (Natural England, 2000).

9.4.64 The surveys and assessments were carried out by qualified arboriculturists. The areas under consideration were surveyed on foot, between 29th January to the 9th February 2024.

9.4.65 Full details of the survey area are set out in Appendix 9.15 Veteran Tree Survey Report which also includes plans showing survey areas and any survey limitations.

9.5 Assessment Criteria and Assignment of Significance

Overview

9.5.1 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).

9.5.2 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. 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 of the ES.

Receptor Value and Sensitivity

9.5.3 The criteria for defining sensitivity in this chapter are outlined in **Table 9.5.1** below.

Table 9.5.1: Sensitivity criteria

Sensitivity/Value	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.
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.

Magnitude of impact

9.5.4 The criteria for defining magnitude in this chapter are outlined in **Table 9.5.2** below.

Table 9.5.2: 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.

Significance of effect

9.5.5 The significance of the effect upon ecology has been determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 9.5.3**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.

9.5.6 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.

9.5.7 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 9.5.3: Assessment matrix

Sensitivity of Receptor	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	Negligible	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	Negligible	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Negligible	Minor	Minor or Moderate	Moderate or Major	Major
Very High	Negligible	Minor	Moderate or Major	Major	Substantial

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

9.5.9 The definitions for significance of effect levels are described as follows.

- Substantial: Only adverse effects are normally assigned this level of significance. These effects are generally, but not exclusively, associated with sites or features of international 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 national importance may also enter this category.
- 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. Effects upon human receptors may also be attributed this level of significance.
- Moderate: These beneficial or adverse effects have the potential to be important and may influence the key decision-making process. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall 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.

Assumptions and limitations of the assessment

9.5.10 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.

9.6 Baseline Environment Conditions

Desk study

9.6.1 Information on ecology and nature conservation within the Project site was collected through a detailed review of existing studies and datasets. These are summarised in **Table 9.6.1**.

Table 9.6.1: Summary of desk study sources used

Title	Source	Year	Author
TVERC Data Search	TVERC	2024	TVERC
MAGIC Maps	Defra	2024	Defra
JNCC Website	JNCC Website	2024	JNCC
West Oxfordshire District Council Local Plan 2031 Policy EH3: Biodiversity and Geodiversity	West Oxfordshire District Council Website	2024	WODC
Cherwell District Council Adopted Cherwell Local Plan 2011-2031	Cherwell District Council Website	2024	CDC
Vale of White Horse District Council: Local Plan Part 1	Vale of White Horse District Council Website	2024	VWHDC
Woodland Trust Ancient Tree Inventory	Woodland Trust Website	2024	Woodland Trust
OS Mapping	Ordnance Survey Data	2024	Ordnance Survey

Identification of designated sites

9.6.2 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 9.6.2**.

9.6.3 Detailed information regarding the relevant qualifying interests of each designated and the location of statutory and non-statutory designated sites in relation to the Project Site is presented within Appendix 9.1: Desk Study.

Table 9.6.2: Designated sites and relevant qualifying interests

Designated site	Distance to the Project (nearest point, km)	Relevant qualifying interest
Statutory Designated sites		
Wytham Woods	Adjoining the Site boundary	SSSI
Blenhiem Park	0.01	SSSI
Rushy Meadows	0.65	SSSI
Sheep's Bank (Formerly Holly Bank SSSI)	0.75	SSSI
Wytham Ditches and Flushes	0.86	SSSI
Oxford Meadows	1.00	SAC
Hurst Hill	1.00	SSSI
Pixey and Yarnton Meads	1.00	SSSI
Cassington Meadows	1.06	SSSI
Wolvercote Meadows	2.52	SSSI
Port Meadow with Wolvercote Common & Green	2.92	SSSI
Sturt Copse	3.34	SSSI
Cothill Fen	3.65	SAC and SSSI
Out Wood	3.79	SSSI
Middle Barton Fen	3.85	SSSI
Stonesfield Common, Bottoms and Banks	3.92	SSSI
Hook Meadow and The Trap Grounds	3.97	SSSI
Non-Statutory Designated Sites		
Glyme and Dorn Valleys	Partially overlapping the site at Stratford Lane south of Wooton	CTA
Oxford Meadows and Farmoor	Partially within the site around Swinford between Eynsham and Wytham Woods.	CTA

Designated site	Distance to the Project (nearest point, km)	Relevant qualifying interest
Wytham Hill	Partially within the site around Swinford between Eynsham and Wytham Woods.	CTA
Oxford Heights West	Partially within the site at the southern end around Denman's copse.	CTA
Bladon Heath	Adjacent to and bounded by the site boundary on all sides	LWS
Burleigh Wood	Adjacent to and bounded by the site boundary on all sides	LWS
Sansoms Lane Green Lane	Adjacent to boundary between Woodstock and Shipton-on-Cherwell	CDDWS
Weavely Furze Firewood Allotments	Adjacent to boundary between Woodstock and Shipton-on-Cherwell	CDDWS
Smith Hill Copse	Adjacent to southern boundary.	LWS
Denman's Copse	Adjacent to the southern boundary.	PLWS
Pinsley Wood	Adjacent to the western boundary near Long Hanborough.	LWS
City Farm	Adjacent to the western site boundary north of Eynsham	LWS
Yarnton Sidings	0.01	PCDDWS
Blenheim and Ditchley Parks	0.01	CTA
Farmoor Reservoir	0.02	LWS
Acrey Waters	0.04	LWS
Begbroke Wood	0.06	LWS
Wootton Jubilee Fields	0.11	LWS
Swinford Farm Meadow	0.15	LWS
Cassington Gravel Pits South (Smiths Pits)	0.15	LWS
Long Mead	0.16	LWS
Cotswold Valleys	0.22	NIA
Pasture near Chawley	0.24	LWS
South Freeland Meadows	0.29	LWS
Frogwelldown Lane	0.32	CDDWS
Hollybank Marsh	0.33	LWS

Designated site	Distance to the Project (nearest point, km)	Relevant qualifying interest
Lower Cherwell Valley	0.37	CTA
Chawley footpath	0.38	LWS
Long Copse	0.38	LWS
Long Leys Farm Meadows	0.39	LWS
Bunkers Hill Quarry	0.39	LWS
Tackley Heath	0.40	LWS
Cassington to Yarnton Gravel Pits	0.49	LWS
Eynsham Wood	0.74	WTR
Langford Meadows	0.86	LWS
Woodstock Water Meadows	0.92	LWS
Thames Island west of Farmoor	0.94	LWS
Bletchingdon Quarry and Fen	0.99	LWS
Somerford Mead	1.10	LWS
Riverside Meadow	1.30	PCDDWS
Blenheim Park - New Park and part of Great Park	1.32	PLWS
Louie Memorial Fields	1.32	LWS
Oxey Mead	1.33	BBOWT
Wolvercote Mead	1.46	LWS
Wytham Park	1.47	LWS
Worcester Hill Bank and Marshes	1.48	LWS
Lincelane Copse	1.52	PCDDWS
Pixey Mead	1.55	BBOWT
Thrupp Community Woodland	1.58	CDDWS
Wet Wood and Swamp near Yarnton	1.63	LWS
Enslow Marsh	1.70	LWS
Upper Thames	1.73	CTA
Wychwood and Lower Evenlode	1.74	CTA
Kidlington Copse (Parkhill Copse)	1.77	PCDDWS
Glyme Valley, Glympton	1.84	LWS
Harcourt Hill Scrub and Fen	1.91	LWS
Loop Farm Flood Meadows	1.98	LWS

Priority Habitats

9.6.4 The desk study identified three priority habitats mapped as occurring within the Project Site, including: coastal and floodplain grazing marsh, lowland mixed deciduous woodland and rivers. The desk study also identified possible priority grassland habitat within the Project site.

Site-specific surveys

Habitats

Phase 1

9.6.5 The findings of the Phase 1 habitat survey are summarised below and set out in more detail in Appendix 9.2: Phase 1 Habitat Survey Report.

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

9.6.7 For ease of survey and reporting, the Project site was divided into 17 parcels comprising Areas 1 to 16 and Denmans Farm. An overview of habitats present within each survey area is provided.

Wider site

9.6.8 A total of 21 ponds were identified within the Project site. Dry ditches and man-made field drains occurred within, and adjacent to, arable fields and grasslands across the site, several of which were in association with hedges and woodland edges. There were several small streams around the wider site, often in association with arable fields or lines of trees.

9.6.9 The great majority of the Project site consisted of active arable fields. In some cases, these fields were bordered by improved grassland buffers on all sides. Some arable field edges were bordered directly by hedgerows or fences.

9.6.10 Notable species commonly encountered within grass buffers included field scabious *Knautia arvensis* (England Red List: near threatened) with dwarf spurge *Euphorbia exigua* (Oxford BAP species and Great Britain Red List: vulnerable) present across the site.

Area 1 and 2

9.6.11 Area 1 and 2 comprise a long, narrow area extending from east of the village of Wootton north to the Rousham Gap. The majority of these sites are arable fields. Smaller areas of defunct arable fields are also present to the north of Area 1. These fields are bordered by grassland of varying sward heights, up to 6 m wide planted as bee borders. Some arable field edges were bordered directly by hedgerows (a mix of native species rich and species poor), or fences. Area 1 and Area 2 are separated by a footpath and cycleway which

has a narrow strip of species-rich, calcareous scrub, and woodland either side of it.

9.6.12 Modified grassland was present to the north of Area 2. A set-aside of unmanaged vegetation was present in Area 1.

9.6.13 Notable species identified in Areas 1 and 2 included bluebell *Hyacinthoides non*-scripta (listed in Schedule 8 of the WCA and an Oxford BAP species), field scabious *Knautia arvensis* (England Red List: near threatened), dwarf spurge *Euphorbia exigua* (Oxford BAP species and Great Britain Red List: vulnerable), chicory *Cichorium intybus* (England Red List: vulnerable) and sainfoin *Onobrychis viciifolia* (Great Britain Red List: vulnerable).

Area 3 and 4

9.6.14 Area 3 and 4 lie just south-east of the small village of Wootton. The area is mostly agricultural (arable) on dry, calcareous ground but there is one pocket of adjacent semi-improved calcareous grassland that is just outside of the Project site. The fields are arable and contain broad margins and strips of uncultivated vegetation. In addition, there are both native species-rich and species poor hedges bordering the fields. Broadleaved trees were dotted around the field margins separating the fields of Area 4. Running water (ditches) could also be found bordering the southern fields of Area 4.

9.6.15 On the western and southern fringes of Area 3 are 5 m wide strips of tall, uncut grassland. A tall uncut grass fringe up to 5 m wide on the north and east side of the eastern field of Area 3.

9.6.16 Notable species identified in Areas 3 and 4 included bluebell *Hyacinthoides non*-scripta (listed in Schedule 8 of the WCA and an Oxford BAP species), dwarf spurge (Oxford BAP species and Great Britain Red List: vulnerable) and sainfoin (Great Britain Red List: vulnerable).

Area 5 and 6

9.6.17 Area 5 and 6 lie between the villages of Bladon and Begbroke. The area is almost entirely agricultural (arable cereal crops) with small areas of woodland. A small block of broadleaved woodland is present. Species rich hedgerows border the areas. Species-poor hedges are also present in Area 5 and 6.

9.6.18 The southern portion of this area is an arable farmland dominated landscape with mostly intact species-rich hedgerows and associated dry and standing water ditches running alongside.

Area 7 and 8

9.6.19 Area 7 and 8 are entirely agricultural (arable and pasture), with large areas of ancient woodland located to the south and east of the Project site. The woodland areas to the south and east are a mixture of plantations of oak and pine, or more natural oak and ash woodland. Apart from the southern boundary of Area 7 where there is a belt of bramble scrub, the fields are cultivated virtually to their boundaries and there is no graduation of habitat from dense woodland to agricultural field.

9.6.20 The fields in both Area 7 and 8 east of the Bladon to Cassington Road are pasture, mostly cut for hay but with some sheep grazing in Area 7 and one ploughed field in Area 8. Most of the hedges in both Area 7 and 8 are species poor.

Area 9, 10 and 11

9.6.21 Areas 9, 10 and 11 are predominantly arable land with arable crop running up to species-poor surrounding hedges. Most hedges appear to be intensively managed, however, some species rich hedges are present.

9.6.22 Some grassland verges are present within these areas, dominated by Yorkshire fog *Holcus lanatus* with substantial crested dog's-tail *Cynosurus cristatus* and perennial rye grass *Lolium perenne* as well as marsh foxtail *Alopecurus geniculatus*.

9.6.23 Two areas of willow woodland dominated are located on the boundary of Areas 9 and 11.

Area 12, 13 and 14

9.6.24 A majority of Areas 12,13 and 14 are arable land with, for the most part, the arable crop running up to the surrounding hedges. Most of these hedges, particularly in Area 14, appear to be intensively managed.

9.6.25 River Evenlode flows between Areas 12 and 13, with a connective ditch in the southwest of Area 13. Areas of woodland occur, both natural and plantation.

9.6.26 The hedges within Areas 12, 13 and 14 are predominantly species rich.

Area 15 and 16

9.6.27 The majority of the fields in Areas 15 and 16 comprised further arable fields with a small number of improved and poor semi-improved grasslands.

9.6.28 The hedgerows were mainly species poor.

Denmans Farm

9.6.29 The majority of this area comprised intensively managed arable fields with a small number of improved grasslands. The hedgerows were mainly species rich although all were intensively managed.

9.6.30 Notable species corn mint *Mentha arvensis* (England Red List Species near-threatened) was identified in the southwestern corner of the Denman's Farm.

Important Hedgerows

9.6.31 21 out of the 67 hedgerows being directly impacted by the Project were deemed as being Important Hedgerows. The full Hedgerow Regulations Assessment is provided in Appendix 9.3: Hedgerow Survey Report.

Non-native Invasive species

9.6.32 Giant knotweed *Fallopia sachalinensis* was identified within the Southern Site Area in the north of Denman's Farm. Giant knotweed is listed in Schedule 9 of the Wildlife and Countryside Act 1981 as a Non-native Invasive species in the UK.

Offsite habitats

9.6.33 The Project 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

9.6.34 A number of parcels of ancient woodland are located within close proximity to the Project site (Appendix 9.1: Desk Study). Of which, Bladon Heath falls partly within the Project site in the Central Site Area. The next closest parcels are located around the centre of the Project comprising Pinsley Wood (adjacent to the western boundary) and Burleigh Wood. In addition, Denman's Copse and Saddle Copse are located adjacent to the Southern area of the Project site.

Broadleaved woodland

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

Waterbodies

9.6.36 A number of other important watercourses are within cable routes of the Project and some 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.

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

9.6.38 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 Resevoir (designated as a LWS).

Species

9.6.39 The findings of the surveys that have been undertaken for protected and notable species are summarised below.

Bats

9.6.40 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, riparian habitats, 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.

9.6.41 Appendix 9.64: Bat Survey Report provides details of results. The automated activity surveys identified at least nine species of bat using the site with considerable activity in all surveyed locations. The advanced bat licensed survey techniques confirmed the presence of at least twelve species of bats and identified roosts for barbastelle and Bechstein's bats within the woodlands and parkland adjacent to the Project site. Existing background data, as set out in Appendix 9.1: Desk Study had records of at least 12 species of bat, including barbastelle, greater horseshoe and lesser horseshoe. Some of these records were very close to the site (within circa 300 m) 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.

Great Crested Newt (GCN)

9.6.42 The majority of the Site is considered to be sub-optimal terrestrial habitat for this species because it is dominated by arable fields. 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.

9.6.43 Following HSI surveys, eDNA surveys confirmed GCN presence in six ponds within 500 m of the Project site. Four were subject to population size class assessment which identified small GCN populations within each of the four ponds.

9.6.44 All of the ponds where GCN were recorded fall outside of the Project site boundary.

9.6.45 Further details of the results of survey are provided in Appendix 9.5: Great Crested Newt Survey Report which also includes plans showing the locations of ponds.

Terrestrial Invertebrates

9.6.46 The majority of the site is considered to be of low value to invertebrates, comprising intensively managed agricultural fields.

9.6.47 The areas of high invertebrate interest are patchily distributed but the hedgerows and field margins in many places have good connectivity and are well managed for wildlife diversity. The presence of marshy habitats by rivers add to the invertebrate potential of some areas.

9.6.48 No species identified during the invertebrate assemblage surveys were of particular interest or conservation concern.

9.6.49 Further details of the results of survey are provided in Appendix 9.6: Invertebrate Survey Report which also includes plans showing the locations moderate and high invertebrate potential areas of the Project site.

Reptiles

9.6.50 The majority of the Project site was not suitable for reptiles because it comprises arable fields with limited field margins. Dense vegetation in the bases of hedgerows, alongside ditches, woodland and scrub are the core reptile habitats within the Project site.

9.6.51 A low population of slow worm was recorded in Areas 5-6. Low populations of slow worm, common lizard and grass snake were identified in Areas 7-8. Areas 5-8 all occur within the Central Site Area of the Project site.

9.6.52 Further details of the results of survey are provided in Appendix 9.7: Reptile Survey Report which also includes plans showing the locations of reptiles identified within the Project site.

Badger

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

9.6.54 Signs of badger activity were recorded during badger surveys, for badger welfare purposes, information on locations of setts is not disclosed here. This information will be provided as a confidential appendix to the ES, provided to PINS and appropriate stakeholders as determined by PINS.

Breeding Birds

9.6.55 In total, 107 species were recorded across all surveyed areas. Of these 107 species, 61 were included within the breeding assemblage for the site (i.e., confirmed, probable or possible breeders).

9.6.56 A total of 33 of these species qualify as being of conservation interest. The following species accounts relate to these species. **Table 9.6.3** below summarises their status across the Project site.

9.6.57 Further details of the results of survey are provided in Appendix 9.9: Breeding Bird Survey Report which also includes plans.

Table 9.6.3 Breeding birds within study area

Species	No. of pairs 2023	No. of pairs 2024	UK breeding population	County status	Geographical importance of breeding population	BoCC Status	Criteria for status
Barn Owl	-	2	4,000–14,000	Common resident.	Local	-	Schedule 1
Bullfinch	1	-	265,000	Common resident.	Local	Amber	BDMp2
Cetti's warbler	1	2	3,450	Common but restricted breeder	Local	-	Schedule 1
Corn Bunting	-	1	11,000	A local species or species that occurs annually in small numbers	Local	Red	HD, BDp2, BDr2; BDMp1, BDMr1, WDMr1
Dunnock	66	113	2,500,000	Common resident.	Local	Amber	BDMp2
Firecrest	-	1	2,000	Common but restricted breeder.	Local	-	Schedule 1
Greenfinch	17	25	785,000	Widespread but declining breeding species	Local	Red	BDp1/2
Grey Wagtail	2	-	37,000	Common resident.	Local	Amber	BDMp2
Greylag Goose	1	-	47,000	Common resident.	Local	Amber	WL, WI
House Sparrow	12	5	5,300,000	Common resident.	Local	Red	BDp2
Kestrel	1	5	31,000	Common resident.	Local	Amber	BDMp1/2
Lapwing	3	5	97,500	Common resident.	Local	Red	BDp2; ERLOB, BDMp1, WDMp1
Linnet	23	37	560,000	Common resident.	Local	Red	LC (br)
Mallard	2	6	61,000–145,000	Common resident.	Local	Amber	WDMp1/2
Marsh Tit	-	1	28,500	Common resident.	Local	Red	BDp2
Mistle Thrush	3	7	165,000	Common resident.	Local	Red	BDp2; BDMp1

Botley West Solar Farm

Species	No. of pairs		UK breeding population	County status	Geographical importance of breeding population	BoCC Status	Criteria for status
	2023	2024					
Moorhen	8	4	210,000	Common resident.	Local	Amber	BDMp2
Nightingale	1	-	5,550	A local species or species that occurs annually in small numbers	Local	Red	BDp1/2; BDMr2
Red Kite	1	2	4,400	Common resident.	Local	-	Schedule 1
Reed Bunting	15	21	275,000	Common resident.	Local	Amber	BDMp2
Rook	20	14	980,000	Common resident.	Local	Amber	ERLOB
Sedge Warbler	8	5	240,000	Common resident.	Local	Amber	BDMp2
Shelduck	1	-	7,850	A local species or species that occurs annually in small numbers	Local	Amber	BDMp1, WDMp1, WL
Skylark	72	228	1,550,000	Common resident.	Local	Red	BDp2
Song Thrush	12	-	1,300,000	Common resident.	Local	Amber	BDMp2
Starling	4	2	1,750,000	Common resident.	Local	Red	BDp1/2
Stock Dove	3	24	5,150,000	Common resident.	Local	Amber	BI
Tawny Owl	-	4	50,000	Common resident.	Local	Amber	BDMp1/2
Whitethroat	66	73	1,100,000	Encountered in good numbers in suitable habitat	Local	Amber	BDMp2
Woodpigeon	34	121	5,150,000	Common resident.	Local	Amber	BI
Wren	104	264	11,000,000	Common resident.	Local	Amber	BI
Yellow Wagtail	1	6	19,500	A local species or species that occurs annually in small numbers	Local	Red	BDp2 BDMp1 , BDMr1/2

Species	No. of pairs		UK breeding population	County status	Geographical importance of breeding population	BoCC Status	Criteria for status
	2023	2024					
Yellowhammer	58	78	700,000	Fairly common but declining resident.	Local	Red	BDp2; BDMp1

Abbreviations used in Table 9.6.3: 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

Wintering (non-breeding) Birds

9.6.58 Fifty of the 96 species recorded during the wintering bird surveys qualify as being of conservation interest. The following 13 species are species of Principal Importance listed under Section 41 of the NERC Act (2006): bullfinch, corn bunting, dunnock, grey partridge, herring gull, house sparrow, lapwing, linnet, marsh tit, skylark, song thrush, starling, and yellowhammer.

9.6.59 The following six species recorded during the wintering bird surveys are Annex 1 species: golden plover, kingfisher, little egret, merlin, peregrine, and red kite.

9.6.60 The following 15 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, merlin, mistle thrush, skylark, starling, woodcock, and yellowhammer.

9.6.61 The following 29 species are included on the BoCC Amber List: black-headed gull, bullfinch, common gull, Dartford warbler, dunnock, gadwall, great white egret, green sandpiper, grey wagtail, greylag goose, kestrel, lesser black-backed gull, mallard, meadow pipit, moorhen, redwing, reed bunting, rook, shelduck, snipe, song thrush, sparrowhawk, stock dove, tawny owl, teal, wheatear, wigeon, woodpigeon, and wren.

9.6.62 The numbers of the majority of the species of conservation concern recorded during the winter seasons are broadly representative of the species in the wider landscape, given the type and extent of suitable habitats present the numbers recorded are considered to be of no more than local importance.

9.6.63 The exceptions are black-headed gull, corn bunting, fieldfare, golden plover, lapwing, linnet, redwing, skylark, starling, and yellowhammer where larger numbers were recorded and considered to be of county importance. However, the peak count is an accumulation of the numbers recorded across the whole site and not specific to one survey area or flock. Given the winter flocking behaviour of these species, the scale of the whole site, the habitats within and surrounding the given area, these numbers are still broadly unexceptional.

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

9.6.65 Further details of the results of survey are provided in Appendix 9.10: Wintering Bird Survey Report which also includes plans.

Dormouse

9.6.66 Dormice populations have been recorded in the local area (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.

9.6.67 Surveys completed to date have identified evidence of dormouse in the Central Site Area. As such, it is considered that this species is likely present throughout the Project site but in low densities. This is consistent with the known

distribution of this species within hedgerows where they occur at around 1.3 adults/ha (Bright & MacPherson, 2002).

9.6.68 Further details of the results of survey are provided in Appendix 9.11: Dormouse Survey Report which also includes plans showing the locations of dormice identified within the Project site.

Arable Weeds

- A total of 10 arable weed species of conservation interest were identified within the Project site. Notable species identified included: corn mint *Mentha arvensis* (England Red List Species near-threatened) and Dwarf spurge *Euphorbia exigua* (Oxford BAP species and Great Britain Red List: vulnerable).

9.6.69 Other notable species identified during surveys include field scabious *Knautia arvensis* (England Red List: near threatened) and sainfoin *Onobrychis viciifolia* (Great Britain Red List: vulnerable).

9.6.70 The presence of rare arable weeds can be a criterion for a site to qualify as a Local Wildlife Sites (LWS) following the eligibility criteria detailed in Berkshire, Buckinghamshire and Oxfordshire Local Wildlife Sites Selection Criteria v7 (TVERC 2024). This requires that a site supports populations of rare species that are a large proportion of the district or county population. Although some of the species occurred in a number of fields, none of them occurred frequently enough to qualify as being a large proportion of the district or county population.

9.6.71 Notwithstanding this, the presence of a range of rare arable weeds means the Project site is of some importance for such species, possibly representing the size of the site and the range of arable habitats present.

9.6.72 Further details of the results of survey are provided in Appendix 9.12: Arable Weed Survey Report which also includes plans showing the locations of arable and notable species within the Project site.

Veteran Trees

9.6.73 In total, over sixty veteran trees and three veteran tree groups were recorded, including nine tree species. Some may be considered marginal with regards their veteran status, due to a lack of decaying wood, or low number of features when assessed using the above veteran criteria.

9.6.74 Further details of the results of survey are provided in Appendix 9.15: Veteran Tree Survey Report which also includes plans showing the locations of veteran trees within the Project site

Other species

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

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

9.6.77 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).

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

9.6.79 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.

Future baseline conditions

9.6.80 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.

9.6.81 Climate change is expected to bring a warmer environment in the United Kingdom, 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.

9.6.82 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.

9.6.83 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.

Key receptors

9.6.84 **Table 9.6.4** identifies the Important Ecological Features (IEF) taken forward into the assessment.

Table 9.6.4: Key receptors taken forward to assessment

Receptor	Description	Sensitivity/value
Habitats and Sites		
Internationally Designated Sites	Conservation of Habitats and Species Regulations 2017	International

Receptor	Description	Sensitivity/value
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
Important Hedgerows	The Hedgerows Regulations 1997 Important Hedgerows	National
Waterbodies (including ponds and the River Evenlode)	NERC Act 2006 Section 41 Habitats of Principal Importance	National
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. Both Bechstein's bat and barbastelle are also listed on Annex II of the Habitats Directive. The assemblage scores 100% with respect to the species present (as described in Appendix 9.4	International

Receptor	Description	Sensitivity/value
	Bat Survey Report). Although this would normally qualify as national, given the diversity of species and presence of two breeding Annex II species, the assemblage is considered at international level of importance for the purposes of assessment.	
Terrestrial invertebrate assemblage	Terrestrial invertebrate assemblage within the Project considered to be of no more than local value. Given the nature of the habitats within the majority of the Project site (arable fields) and the invertebrate assemblages present, such populations are focused within the hedgerows and woodlands as well as along the River Evenlode corridor.	Local
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
Reptiles	All reptiles are NERC Act 2006 Section 41 Species of Principal Importance.	County
Arable Weeds	The site supports a range of arable weeds on site, these are considered to be an IEF of County value on the basis that red listed species of conservation importance are present.	County
Notable Flora Species	The site supports notable flora species, not listed as arable weeds, these are considered to be of County value on the basis that they are rare at the county level.	County
Veteran Trees	Veteran and Ancient trees are trees of interest biologically, aesthetically or culturally by virtue of their age, trees in an ancient state or those that are old relative to others of the same species.	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

Maximum design scenario

9.7.1 The maximum design scenarios identified in **Table 9.7.1** 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 6: Project Description of the ES **[EN010147/APP/6.3]**. Any other development scenario is considered to have less significant effects, based on details within the Project Design Envelope (e.g. different infrastructure layout), to that assessed here being taken forward in the final design scheme. In other words, the maximum design scenario is the "worst case" and there may be opportunities to minimise these impacts further as the design continues to be refined.

Table 9.7.1: Maximum design scenario considered for the assessment of potential impacts

Potential Impact Phase	Phase C	Phase O	Phase D	Maximum Design Scenario	Justification
Temporary and permanent habitat loss during construction	✓	✗	✓	**Construction phase** Construction of the project is anticipated to begin shortly after DCO consent, and last approximately 24 months, with completion of construction in 2028. **Site preparation and Site Access** • Site preparation with a total Project area of 1,300 hectares. • Vehicular access to serve the installation areas will either be through existing field entrances or purpose-built new access roads. • Delivery of construction material, plant, equipment and equipment to site. • Establishment of perimeter fence and main construction compound(s), placement of four temporary construction compounds (one in the Northern, two located in the Central and one located in the Southern Project sites) and temporary field compounds for installation areas. The exact locations of these compounds is not yet known. • Solar PV module and associated infrastructure construction, comprising; delivery of components to site, erection of module mounting structures, installation of modules and power converter stations, trenching and installation of electric cabling, transformer foundation excavation and construction and testing and commissioning. • Removal of circa 666 m of hedgerows and non-hedgerow linear features at 80 locations.	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, footpaths, cycleways 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.
The impact of habitat disturbance from noise, vibration and lighting	✓	✓	✓	• All construction compounds will be temporary and specifically sited to minimise environmental impact. Topsoil and subsoil will be stripped from such areas and stored on site for replacement following the completion of construction works.	The maximum NGET substation size and associated access/maintenance roads combined with the trenching for the AC and DC cables across the entire Project site represents the maximum design scenario, leading to disturbance of habitats.

Potential Impact Phase	Phase C	Phase O	Phase D	Maximum Design Scenario	Justification
				Solar PV array and Associated Infrastructure Construction • Total combined developable area of solar array of 844 hectares. • Impact piling to a maximum depth of 3 m to enable deployment of solar PV module mounting structures, totalling a maximum of 1,900,000 to 2,500,000 piles. • Mounting of approximately 900,000 to 2,500,000 modules across Project site. • Construction of 156 power converter measuring 12 m to 14 m long and 2.7 m to 3.5 m high. • Construction of up to 8 High Voltage Transformers (L18 m x W10 m x H6 m). • Earthworks for transformer foundations and National Grid Electricity Transmission (NGET) substation and associated excavations.	Field boundaries and connected habitats would be retained but could be subject to short-term (up to two years) disturbance during construction that could deter species from utilising surrounding suitable habitats. Impact piling to 3 m 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 a week 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	✓	×	✓	• Movement of arisings from earthworks. • Construction of NGET substation within an area of land up to a maximum of 3.8 ha with substation dimensions of 87 m by 30 m with a maximum height of 12 m. • Trenching for AC cables to a maximum depth of 1.2 m (which would be within fields). • Trenching for DC cables in mounting structures maximum depth of 0.8 m.	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)	✓	×	✓	**Other Infrastructure** • Construction of fencing measuring a maximum height of 2.1 metres with a maximum total project length of 106 m. • Erection of 14 CCTV cameras with maximum height of 4 m.	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.
The impact of dust generation on habitats and species	✓	×	✓	**Landscaping**	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

Potential Impact Phase	Phase C	Phase O	Phase D	Maximum Design Scenario	Justification
				• Habitat creation and management measures including (but not limited to) creation of new grassland, hedgerows (circa 26.5 km planted, and 22 km enhanced) and woodland planting (circa 15 ha). • Creation of new enhancement corridor along River Evenlode.	alteration and degradation and deter fauna from using affected habitats.
The impact of changes in air quality from emissions due to increased traffic movement	✓	×	✓		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 200 m of designated sites (as per HA 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.
The impact of changes in habitat connectivity	✓	✓	✓		The removal of hedgerows for the purposes of site access or cable crossing has the potential to result in changes to habitat connectivity across the site for a variety of IEFs. As set out in Chapter 6, although every effort will be made to use either existing gaps or trenchless techniques, the MDS assumed that all such crossings will result in hedgerow removal. As such, the maximum to be removed is circa 666 m of hedgerows and non-hedgerow linear features at 80 locations.
The impact of habitat creation	✓	×	✓	**Operational Phase** The Project is assumed to become operational in October 2028. **Operational Activities and Maintenance** • Movement of personnel across the Project site during daylight hours on foot or vehicle, seven days a week. • Solar PV Array and Transformer lighting combination of manually operated lighting and passive infra-red (PIR) motion sensor activated security / emergency lighting.	The majority of the Project site will be planted as grassland managed for ecological benefit through conservation grazing. In addition, 29 km of new hedgerow, 28 km of reinforced existing hedgerow and 5 ha of new woodland to be created. The River Evenlode corridor will also be reverted to floodplain meadow to create an additional 97 ha. This may impact a range of IEFs that could use these new habitats through improved connectivity, foraging, nesting and shelter potential.

Potential Impact Phase	Phase C O D	Maximum Design Scenario	Justification
		• Electrical Compound lighting combination of manually operated lighting and PIR motion sensor activated security / emergency lighting. • Monitoring and management 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 DCO. • Decommissioning is likely to operate within the parameters identified for construction (i.e., 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 will be removed from Project site during decommissioning and returned to former use, except for the NGET substation and underground cables (where they have been laid in the public highway and where cables have been laid using horizontal directional drilling – either under rivers, road, rail crossings, or existing landscape features) which will remain.	

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

Cable corridor options – Northern Site between Oxfordshire Way and B4027 (Figures 2.4a of Volume 2 [EN010147/APP/6.4]).

9.7.2 Two cable options are being considered in this location. Option A requires a break in the hedgerow adjacent to Sturdy's Castle and then uses an existing track between the building and the B4027.

9.7.3 Option B uses the adjacent farmland with a similar break in the hedgerow further south to bring the cable onto the track prior to crossing the B4027.

9.7.4 Option B is therefore worst case since it would require trenching to lay the cable within the arable landscape near to the hedgerow rather than along an existing track.

Cable corridor options – Area between Northern and Central Sites on Land to the east of Woodstock and near the Bladon roundabout on the A44 (Figures 2.4b of Volume 2 [EN010147/APP/6.4]).

9.7.5 There are four cable options being considered in this location. Option A follows arable fields and existing field boundaries before joining the Upper Campsfield Road and being laid within the road corridor.

9.7.6 Option B is similar but uses an existing break in the hedgerow to take the cable through into the adjacent field such that HDD can be used to take it under the A44 Bladon roundabout.

9.7.7 Option C requires a break in the hedgerow to the west of Hensington before joining Shipton Road and following the existing highway along Upper Campsfield Road.

9.7.8 Option D is the same as Option C but uses the same HDD method of Option B to cross the A44 Bladon roundabout.

9.7.9 Options C and D require additional gaps in a hedgerow to be created so are considered to be the worst case.

Cable corridor options – Central Site on land east of Burleigh Wood and around Bladon Heath (Figures 2.4c of Volume 2 [EN010147/APP/6.4]).

9.7.10 There are three cable options being considered in this location. Option A runs to the north of Bladon Heath before cutting through an area of scrub and across arable fields before being taken between Bladon and Burleigh Woods via HDD and then along existing arable fields and through existing field accesses. This route would also result in a 5m gap being created in the bat flight line between Bladon Heath and the Blemheim Estate.

9.7.11 Option B runs to the south of Bladon Heath within arable fields before being taken via HDD under a veteran tree and past the edge of Bladon Woods. Upon exiting the HDD, it would run across existing fields, requiring a break in a hedgerow.

9.7.12 Option C follows the same route but without the HDD under the veteran tree, instead running closer to the woodland outside of the root protection zone for that tree.

9.7.13 Option A requires the clearance of several areas of scrub and, as such, is considered to be the worst case.

Cable corridor options – Land between Central Site and Southern Site east and south of Eynsham and around the Swinford Bridge ((Figures 2.4d of Volume 2 [EN010147/APP/6.4]).

9.7.14 There are eight cable options being considered in this location. All use HDD methodology to take the cable under the River Thames and associated floodplain meadows. Option A takes the cable along the B4449 and along the private road to the north of the Seimen's buildings. It then takes the cable into the field north of this road requiring a gap in two existing hedgerows before the HDD launch site. Upon exiting the HDD the cable would run through two hedgerows and across arable fields.

9.7.15 Option B is the same as Option A but uses a number of existing field access points and one potential new hedgerow crossing.

9.7.16 Option C is the same as Option A but with some minor variation south of Swinford, requiring some hedgerow removal.

9.7.17 Option D is similar to Option B but without requiring any hedgerow removal.

9.7.18 Option E takes the cable route off the B4449 along the Cassington Road before crossing fields (via existing field access routes) before HDDing across the Thames and floodplain meadow. The route is then similar to Option A.

9.7.19 Option F is the same as Option E but with the cable route after the HDD through existing arable fields and a small break in an existing hedgerow to join near Swinford.

9.7.20 Option G is the same as Option E but with the final cable route post HDD requiring breaks in one hedgerow to join the main route near Swinford.

9.7.21 Option H is the same as Option E but requires the removal of hedgerows south of the HDD to facilitate rejoining the main route near Swinford.

9.7.22 All options require the removal of some lengths of hedgerow and, as such are broadly equal with respect to impact.

9.8 Mitigation and Enhancement Measures Adopted as Part of the Project

9.8.1 The design process for the Project has been heavily influenced by the findings of early environmental appraisals and the EIA process. The Project has had several measures incorporated into the design to avoid or minimise environmental impacts.

9.8.2 The key aspects where the design has evolved are described in ES Volume 1, Chapter 5: Alternatives Considered **[EN010147/APP/6.3]**. These include measures required for legal compliance, as well as measures that implement the requirements of good practice guidance documents. The assessment has been undertaken on the basis that these measures are incorporated in the design and construction practices (i.e. they are 'embedded mitigation').

9.8.3 Embedded mitigation measures for the construction phase are set out in the ES Volume 1, Chapter 6: Project Description **[EN010147/APP/6.3]**, Appendix 6.1: Project Mitigation Measures and Commitments Schedule **[EN010147/APP/6.5]** and the various management plans outlined in this chapter **[EN010147/APP/7.6]**.

9.8.4 Implementation of embedded mitigation relied upon in the assessment will be secured in the DCO, including by ensuring the works described in Schedule 1 of the DCO are restricted to their corresponding works areas shown on the Works Plans **[EN010147/APP/2.3]**, a DCO requirement requiring compliance of detailed design of the Project to accord with the Outline Design Principles **[EN010147/APP/7.7]**, or through specific DCO requirements requiring compliance with a management strategy, plan, or other requirement document.

9.8.5 Consideration has been given to any ‘additional mitigation’ over and above the embedded mitigation that may be required and has the potential to mitigate any significant adverse effects identified following the assessment of the Project inclusive of its embedded mitigation. Where significant effects remain following the implementation of embedded mitigation and achievable further measures could lower the identified effect, the topic chapter identifies additional mitigation and explains how the additional mitigation is secured, for example via a specific DCO requirement, via a management plan, or document secured by a DCO requirement like the Project Mitigation Measures and Commitments Schedule **[EN010147/APP/6.5]**.

9.8.6 To the extent any likely significant effects are anticipated following the assessment of the Project after the implementation of embedded and additional mitigation, each topic chapter will report these as residual effects. Residual effects for all topics are summarised in Chapter 21: Summary of Significant Environmental Effects of the ES **[EN010147/APP/6.3]**.

9.8.7 Where relevant, measures have also been identified that may result in enhancement of environmental conditions. Enhancement measures are not required to mitigate significant effects of the Project and are not factored into the determination of residual effects. They are further measures which would have additional beneficial outcomes should they be implemented.

9.8.8 Both embedded and additional mitigation measures relevant to this chapter are summarised in **Table 9.8.1**.Table 9.7.1

Table 9.8.1: Mitigation measures intended to be adopted as part of the Project

Commitment number	Measure adopted	How the measure will be secured
Embedded Mitigation		
9.1	No removal of woodland, ponds or watercourses. The Project has been designed to exclude areas of woodland from within the Order Limits, wherever practicable.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]** and Outline Decommissioning Plan (DP) **[EN010147/APP/7.6.4]**.
9.2	During construction, other than where access through hedgerows is required, all hedgerows, trees, ponds and woodland to have minimum of 5 m 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. Protective fencing, in accordance with BS 5837, would be erected around these features to prevent access by people, materials or machinery. This would reduce the risk of accidental damage during construction activities.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]** and DP **[EN010147/APP/7.6.4]**.
9.3	The Project has been designed to avoid areas of ancient woodland. Measures would be put in place to ensure that a minimum 15 metre buffer is retained between ancient woodland and construction areas. Appropriate fencing in accordance with BS 5837, would be erected around the 15 metre buffer to prevent access by people, materials or machinery to avoid compaction of soils or roots and to avoid any accidental damage, as per Natural England guidance.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]** and DP **[EN010147/APP/7.6.4]**.
9.4	All watercourses to have a minimum 8 m buffer, as per Environment Agency guidelines for protection of such features. A buffer of up to 10m will be maintained from the banks of ordinary watercourses, in line with local bye-laws, where applicable.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]**, LEMP **[EN010147/APP/7.6.3]** and DP **[EN010147/APP/7.6.4]**.
9.5	Creation of Evenlode Corridor to comprise reinstated floodplain meadow. Principals of management are set out in the oLEMP with full details to be set out within the appropriate detailed LEMP.	These measures would be secured as a requirement of the DCO - via LEMP **[EN010147/APP/7.6.3]**.
9.6	All cable routing outside panel fields to be within hardstanding of highways as far as practicable. This includes along the B4044 when adjacent to Wytham Woods SSSI to ensure no indirect effects.	These measures would be secured as a requirement of the DCO - via LEMP **[EN010147/APP/7.6.3]**.
9.7	Completion of pre-construction and pre-decommissioning ecology surveys, as necessary, to ensure an up to date baseline with respect to the location and distribution of relevant protected species. This will inform any necessary applications for protected species licences and any method statements which are required to be complied with during the construction phase and decommissioning phase as set out in the oLEMPs within the operational period.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]**.

Commitment number	Measure adopted	How the measure will be secured
9.8	Deliver at least 70% Habitat Biodiversity Net Gain.	Proposed to be secured as a requirement of the DCO - via oLEMP **[EN010147/APP/7.6.3]**.
9.9	New skylark plots to be delivered within solar arrays.	Proposed to be secured as a requirement of the DCO - via oLEMP **[EN010147/APP/7.6.3].**
9.10	Trenchless techniques will be used to lay underground cables under ancient woodland, watercourses, priority habitats and the majority of hedgerows, as shown within the crossing schedule **[EN010147/APP/7.3.9]**. This will include the River Thames and associated flood meadows. Detailed design of crossings will be agreed with relevant authorities prior to commencement of construction.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]**.
9.11	Avoidance of impacts to Oxford Meadows SAC and all other designated sites along with sensitive habitats.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]**, LEMP **[EN010147/APP/7.6.3]** and DP **[EN010147/APP/7.6.4]**.
9.12	Provision of Outline Landscape and Ecological Management Plan (oLEMP) to include details of habitat management to ensure delivery at least 70% Habitat 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. Prior to construction, a detailed LEMP will be produced to be substantially in accordance with the oLEMP. This will include details of mitigation planting, including the number, location, species and details of management and maintenance of planting. Where practicable, landscape mitigation planting will be established as early as reasonably practicable in the construction phase.	Proposed to be secured as a requirement of the DCO - via oLEMP **[EN010147/APP/7.6.3]**.
9.13	Great crested newt European Protected Species Mitigation Licence or District Level Licence.	Legal requirement.
9.14	Badger Protected Species Mitigation Licence.	Legal requirement.
9.15	Dormouse European Protected Species Mitigation Licence.	Legal requirement.

Commitment number	Measure adopted	How the measure will be secured
9.16	An Outline Code of Construction Practice (oCoCP) has been prepared and submitted with the application for development consent. CoCP(s) will be developed in accordance with the outline CoCP. The oCoCP will include regulatory guidance and industry best practice guidance, such as: • Measures for the appropriate storage of materials and fuels would be implemented to avoid the pollution of designated sites, ancient woodland and the local water environment during construction. These will be captured in a Pollution Prevention Plan (PPP) (to be submitted alongside detailed COCP). • Construction method statement to include measures to minimise impacts on protected species. This will include details of non-licensable mitigation, including for reptiles, birds and rare plants. • Construction method statement for watercourse crossings that will include a bentonite breakout plan. • A construction artificial light emissions plan to ensure that construction lighting was directed to where it was needed and did not significantly increase levels of artificial lighting on sensitive habitats, such as retained woodland and river corridors. Lighting will be designed in accordance with Institute of Lighting Professionals /Bat Conservation Trust guidelines. Construction task lighting will be directed to where it is needed only, to avoid light spillage. Accessories such as hoods, cowls and shields will be used to direct light to the intended area only. Light levels will be as low as the guidelines permit. If construction lighting is not needed, it will be avoided. • Dust Management Plan to set out how dust generation will be managed and minimised. • Suitable habitat for breeding birds would be cleared between October and mid-February, outside the breeding bird season, as far as practicable. Where this is not feasible the vegetation, building or structure due to be removed would first be inspected by a suitably qualified ecologist. Any active nests would be retained along with a minimum 5 metre buffer around them. • Invasive Non-Native Species (INNS) Management Plan. This would set out the details of how the presence of INNS would be monitored and managed during construction. It would also include a Biosecurity Protocol.	Outline CoCP **[EN010147/APP/7.6.1]** to be provided as part of application for development consent. CoCP to be developed in line with Outline CoCP and agreed with relevant stakeholders. CoCP to be secured as DCO requirement.
9.17	The following measures would be implemented to ensure that no badgers are harmed during the construction phase:	Outline CoCP **[EN010147/APP/7.6.1]** to be provided as part of application

Commitment number	Measure adopted	How the measure will be secured
	• Suitable fencing to be erected around all construction works to deter foraging badgers from the works' areas; • Suitable buffer to be observed in relation to any identified badger setts, to avoid disturbance; • 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.	for development consent. CoCP to be developed in line with Outline CoCP and agreed with relevant stakeholders. CoCP to be secured as DCO requirement.
9.18	Use of ECoW to oversee works as necessary.	Committed within oCoCP **[EN010147/APP/7.6.1]**.
9.19	Demarcation of tree protection measures will be defined on the final tree protection plans and Arboriculture Method Statement that will be agreed with the relevant authority prior to construction commencing. Protective fencing will include associated fencing of retained trees within and adjacent to construction areas as specified in the Strategic Arboriculture and Method Statement.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]** and DP **[EN010147/APP/7.6.4]**. Strategic Arboricultural Impact Assessment & Method Statement is set out in Vol 3, Appendix 8.3
9.20	A suitable buffer to protect all important bat flightlines will be incorporated into the detailed masterplan. Protective fencing, would be erected around these features to prevent access by people, materials or machinery. The buffers would comprise a range of habitats scrub and tussocky grass margins to improve the diversity of habitats present and increase the range of ecotones available for bat foraging.	These measures would be secured as a requirement of the DCO - via CoCP **[EN010147/APP/7.6.1]** and DP **[EN010147/APP/7.6.4].**
9.21	Areas of lower value reptile habitat that could support low numbers of reptile, such as field margins, would be cleared sensitively with an ecological clerk of works present. Such clearance would comprise two stage strimming by hand of suitable habitat, directionally towards retained habitat. The first stage would cut to circa 15 cm height to encourage animals to move away from the area. The second stage would be to ground level. A final destructive search would be completed.	To be detailed in oCoCP. These measures would be secured through the DCO **[EN010147/APP/7.6.1]**.
9.22	Areas of new woodland (circa 5ha) would be completed following the establishment and management principles set out in the oLEMP. Final locations for such woodland would be set out in the detailed LEMP.	To be detailed in oLEMP. These measures would be secured through the DCO .
9.23	Creation of circa 26.5km of new species rich hedgerow around the Project site. These would be completed following the establishment and management principles set out in the oLEMP. Final locations for such	To be detailed in oLEMP. These measures would be secured through the DCO.

Commitment number	Measure adopted	How the measure will be secured
	hedgerow planting would be set out in the detailed LEMP	
9.24	Creation of new meadow areas within habitat to be retained for archaeological reasons (approximately 36 ha). Such habitat will be managed specifically for the benefit of both wintering and breeding birds. It will comprise species-rich grassland that will be allowed to set seed to ensure cover for nesting birds such as skylark during spring and a food source for wintering birds.	To be detailed in oLEMP. These measures would be secured through the DCO.
9.25	Habitat management will not use any fertiliser, pesticide or herbicide.	To be detailed in oLEMP. These measures would be secured through the DCO.
9.26	Any area of the Project site to not be developed in order to protect buried archaeology will be managed as wildflower meadow to provide mitigation habitat for both wintering and breeding birds. Such areas will be managed through either grazing or mowing to ensure they provide both cover during breeding and food sources during winter.	To be detailed in oLEMP. These measures would be secured through the DCO.
9.27	All deer fencing will be designed to be permeable to smaller mammals such as badger and fox to ensure permeability of the Project site for these species will be retained.	To be detailed in oLEMP. These measures would be secured through the DCO.
9.28	All badger setts will be retained, where possible, with an appropriate buffer of undisturbed habitat. Retention will be incorporated in the final Project design following pre-commencement surveys.	To be detailed in oLEMP. These measures would be secured through the DCO.

9.9 Assessment of effects

9.9.1 The impacts of the construction, operation and maintenance, and decommissioning phases of the Project have been assessed. The potential impacts arising from the construction, operation and maintenance and decommissioning phases of the Project are listed in **Table 9.7.1**, along with the maximum design scenario against which each impact has been assessed.

9.9.2 A description of the potential effect on receptors, with embedded (but not additional) mitigation caused by each identified impact is given below.

9.9.3 The assessment of significant effects relating to climate change is assessing the effects of Green House Gas emissions on climate change, with the effects of climate change risk scoped out of the assessment.

The impact of temporary and permanent habitat loss during construction, and decommissioning of the Botley West Solar Farm

9.9.4 Construction and decommissioning of the Project may result in the temporary (e.g. cables) or permanent (e.g. sub-station, vehicular access) loss of habitat, which may support protected or notable species and habitats. The MDS is represented by the maximum surface area of habitat loss as outlined in **Table 9.7.1** above. It is anticipated that much of the habitat loss due to the Project will 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

9.9.5 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 1 km east of the Project and Cothill Fen SAC occurs 3.65 km from the Project.

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

Magnitude of impact

9.9.7 The Project will not result in any direct or indirect habitat loss during construction within any internationally designated site within the Zone of Influence.

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

Significance of the effect

9.9.9 Overall, 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 receptor

9.9.10 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

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

Significance of effect

9.9.12 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

9.9.13 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated site to the Project is the Strong Copse component of the Wytham Woods SSSI which is directly adjacent to the cable route corridor along the B4044. The SSSI's interest features include ancient woodland, wood pasture, common land and old limestone grassland supporting populations of nationally scarce butterfly species Black Hairstreak *Strymonidia pruni* and an exceptionally rich flora and fauna.

9.9.14 Blenheim Park SSSI is on the opposite side of the A4095 to the Project boundary. The SSSI's interest features include regionally important lakes for breeding and wintering birds and ancient oak-dominated pasture woodland supporting notable invertebrate assemblages.

9.9.15 Other sites identified within the desk study (Appendix 9.1) were scoped out due to their distance from the Project site and not containing potential impact pathways from the Project site.

9.9.16 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.

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

Magnitude of impact

9.9.18 The Project will not result in any direct or indirect habitat loss during construction within any nationally designated site within the Zone of Influence. Cables will be trenched within the existing carriageway along the B4044 when adjacent to Wytham Woods SSSI to ensure no indirect effects. Furthermore, the implementation of the oCoCP **[EN010147/APP/7.6.1]** will ensure works stay within Project site limits.

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

Significance of effect

9.9.20 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

9.9.21 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

9.9.22 The Project will not result in any direct or indirect habitat loss during decommissioning within any nationally designated site within the Zone of Influence. 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

9.9.23 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

9.9.24 Locally designated sites are those considered to be of importance within the context of the county of Oxfordshire.

9.9.25 A number of other locally designated sites occur adjacent to the Project boundary, including Sansoms Lane Green Lane CDDWS, Weavely Furze Firewood Allotments CDDWS, Smith Hill Copse LWS, Pinsley Wood LWS, Bladon Heath LWS, Burleigh Wood LWS, City Farm LWS and Denman's Copse PLWS.

9.9.26 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).

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

Magnitude of impact

9.9.28 The Project will not result in any direct or indirect habitat loss during construction within any locally-designated site within the Zone of Influence. All other locally designated sites will be protected by appropriate buffers to ensure they are protected during construction.

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

Significance of effect

9.9.30 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

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

Magnitude of impact

9.9.32 The Project will not result in any direct or indirect habitat loss during decommissioning within any locally designated site within the Zone of Influence. 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

9.9.33 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

9.9.34 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.

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

Magnitude of impact

9.9.36 Bladon Woods partly occurs in the Project site within the cable route, HDD will be utilised from outside of minimum 15 m buffers zones.

9.9.37 The remainder of the Project has been designed to avoid any areas of ancient woodland and all that occur adjacent to the project boundary will be protected by a minimum of 15 m buffer, as per Natural England guidelines. There will therefore not be any direct or indirect habitat loss during construction within any area of ancient woodland within the Zone of Influence.

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

Significance of effect

9.9.39 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

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

Magnitude of impact

9.9.41 The Project will not result in any direct or indirect habitat loss during decommissioning within any ancient woodland within the Zone of Influence. Cables laid under ancient woodland will be left in-situ to ensure no impacts are caused from their removal. All appropriate buffers (as per construction) to such habitat will be implemented. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.42 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.

Broadleaved woodland HPI

Construction phase

Sensitivity of the receptor

9.9.43 Areas of non-ancient broadleaved woodland HPI have been excluded from within the Project 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.

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

Magnitude of impact

9.9.45 The Project has been designed to avoid all areas of non-ancient woodland and all that occur adjacent to the project boundary will be protected by a minimum of a 5 m buffer (considered sufficient based on professional experience). Where any ground disturbance is necessary adjacent to woodland, this would be completed following the principles set out in the Strategic Arboriculture Impact and Method Statement (Volume 3, Appendix: 8.3) to ensure no impact to any trees.

9.9.46 There will therefore not be any direct or indirect habitat loss during construction within any area of broadleaved woodland HPI within the Zone of Influence.

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

Significance of effect

9.9.48 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

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

Magnitude of impact

9.9.50 The Project will not result in any direct or indirect habitat loss during decommissioning within any woodland within the Zone of Influence. 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

9.9.51 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

9.9.52 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

9.9.53 The Project has been designed to avoid the floodplain meadow HPI areas. The Project will HDD cables under the floodplain meadow HPI west of Wytham Woods SSSI where it occurs adjacent to the River Thames to ensure no loss of habitat during construction.

9.9.54 The floodplain meadow HPI areas east of Long Hanborough and west of Cassington within the Project site are included within the River Evenlode enhancement area.

9.9.55 There will therefore not be any direct or indirect habitat loss during construction within any area of floodplain meadow HPI within the Zone of Influence.

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

Significance of effect

9.9.57 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

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

Magnitude of impact

9.9.59 The Project will not result in any direct or indirect habitat loss during decommissioning within the floodplain meadow within the Zone of Influence. Cables under the floodplain meadow HPI will be cut and left *in situ* to avoid any impacts. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.60 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

9.9.61 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.

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

Magnitude of impact

9.9.63 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, 10 m buffer for ordinary watercourses, in line with local bye-laws, where applicable). Installation of any cables that cross such features would be via HDD.

9.9.64 There will therefore not be any direct or indirect habitat loss during construction of any waterbody within the Zone of Influence.

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

Significance of effect

9.9.66 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

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

Magnitude of impact

9.9.68 The decommissioning of the Project will not result in any direct or indirect habitat loss within any waterbody within the Zone of Influence. 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

9.9.69 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

9.9.70 Hedgerows provide important connectivity for 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.

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

Magnitude of impact

9.9.72 The Project site includes circa 70 km of hedgerows, many of which are species rich but with limited margins adjacent. The Project has been designed to retain the majority of hedgerow within the Project boundary with the majority of cable routes and site access routes to be via existing field accesses. A 5 m buffer will be maintained around all field boundary hedgerows to ensure their protection during construction. Some installation of cables crossing hedgerows will be via HDD.

9.9.73 During Project design subsequent to the submission of the PEIR, the need to remove small lengths of hedgerow to facilitate access was identified, in particular for visibility splays for site access. As set out in Volume 1, Chapter 6 Project Description, the total length of hedgerow to be removed is circa 622 m across 75 locations. A crossing schedule has been produced setting

out the length of hedgerow to be lost in each location. The majority of these gaps are <3.5 m and average circa 8.5 m wide, the single largest is 70 m wide within the Southern Site Area for the national grid substation.

9.9.74 There will therefore be the loss of circa 1% of the hedgerow resource on site during construction.

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

Significance of effect

9.9.76 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 adverse**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

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

Magnitude of impact

9.9.78 The decommissioning of the Project will not result in any direct or indirect hedgerow loss within the Zone of Influence. 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

9.9.79 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.

Important Hedgerows

Construction phase

Sensitivity of the receptor

9.9.80 Important Hedgerows discussed in this chapter are hedgerows that are ecologically important, providing high value connectivity for 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.

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

Magnitude of impact

9.9.82 During Project design subsequent to the submission of the PEIR, the need to remove small lengths of hedgerow to facilitate access was identified, in particular for visibility splays for vehicular site access.

9.9.83 Out of the 67 hedgerows to be impacted by the project, 21 were deemed as ecologically Important Hedgerows. The total length of important hedgerows to be removed is circa 224 m across 27 locations. The majority of these gaps are <5.5 m and average 8.5 m wide, the single largest is 55 m along the Stratfor Lane in the Northern Site Area.

9.9.84 The remainder of Important Hedgerows within the Project site will be protected, with other hedgerows, by a minimum 5 m buffer to ensure their protection during construction.

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

Significance of effect

9.9.86 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 adverse**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.9.87 The sensitivity of Important Hedgerows is considered to be **medium**.

Magnitude of impact

9.9.88 The decommissioning of the Project will not result in any direct or indirect hedgerow loss within the Zone of Influence. 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

9.9.89 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

9.9.90 The breeding bird assemblage within the 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

9.9.91 The construction of the Project will lead to the loss of arable fields used by breeding bird species such as skylark. However, surveys over the period of two years did not identify significant numbers of territories of this species or

other ground nesting birds (above local value). The majority of hedgerows and all woodland habitats will be retained and protected by suitable buffers and fencing during construction, as set out in **Table 9.8.1** above. As such, the Project will not result in the loss of habitat used by the majority of breeding bird species found across the Project site.

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

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

Significance of effect

9.9.94 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

9.9.95 The breeding bird assemblage within the 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

9.9.96 The grassland to be created under the solar arrays would have provided significant new habitat for breeding birds. At decommissioning, some of this will 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

9.9.97 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

9.9.98 The Project site supports a range of bird species of conservation importance during winter. Although some species occurred in numbers that would be considered of above local importance, it was primarily the assemblage as a whole that was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.9.99 The construction of the Project will lead to the loss of arable habitat across the majority of the Project site although the majority of hedgerows and all woodland will be retained. Species that rely on arable habitats for foraging over winter may be temporarily displaced into surrounding habitat.

9.9.100 Circa 36 ha of land around the Project site is to be protected to preserve underground archaeology that will be managed as meadow grassland to provide some continuity of habitat for wintering birds. This will include wintering seed mixes to provide foraging resources for wintering birds.

9.9.101 The impact of the loss of arable habitat resource is predicted to be long term (for the duration of the Project). The magnitude of impact is therefore, considered to be **medium**.

Significance of effect

9.9.102 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

9.9.103 The Project site supports a range of bird species of conservation importance during winter. Although some species occurred in numbers that would be considered of above local importance, it was primarily the assemblage as a whole that was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.9.104 The grassland to be created under the solar arrays would have provided significant new habitat for wintering birds. At decommissioning, some of this will 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

9.9.105 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

9.9.106 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

9.9.107 Surveys did not identify any aquatic habitat used by GCN within the Project site. All waterbodies that could, in the future, be used will be retained with suitable buffers. There will 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. The closest such ponds to the Project Site were P83 (circa 20 m) and P64 (circa 30 m) within Shipton Slade Farm adjacent to the Northern Site Area (Appendix 9.5 Great Crested Newt Survey Report). The nearest population defined by population estimate surveys was P19 within Saddle Copse circa 130 m from the Project site.

9.9.108 The impact is predicted to be limited in extent as woodlands and hedgerows are to be retained, with the exception of some small sections of hedgerow providing habitat for GCN that will be removed during construction for vehicular access.

9.9.109 Existing field margins will be protected for the most part by the 5 m buffer protecting hedgerows (see **Table 9.8.1**). However, in some locations, the existing field margins extend more than 5 m beyond hedgerows, where possible, these will be retained in the final design, but there may be some minor loss of total area.

9.9.110 Works to hedgerows and field margins will be undertaken under licence from Natural England following appropriate methodologies.

9.9.111 Any loss of habitat will be temporary (a maximum in any one location of circa 1 year) with habitat reinstated post construction.

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

Significance of effect

9.9.113 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

9.9.114 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

9.9.115 There will 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 will 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

9.9.116 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

9.9.117 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

9.9.118 Badger activity was spread across the majority of the Project site (Appendix 9.8: 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 will be protected during construction with at least 5 m buffers and appropriate fencing, with the exception of small sections of hedgerow removed during construction (circa 1% of the total hedgerow resource on site). This work will be undertaken under licence from Natural England following appropriate methodologies.

9.9.119 As such, it is not anticipated that any sett will 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. This will be finalised at the completion of pre-commencement surveys and final design.

9.9.120 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.

9.9.121 Existing field margins that provide foraging habitat for badgers will be protected for the most part by the 5 m buffer protecting hedgerows (see **Table 9.8.1**). However, in some locations, the existing field margins extend more than 5 m beyond hedgerows, where possible, these will be retained in the final design, but there may be some minor loss of total area.

9.9.122 In addition, there will be a temporary (no more than 1 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.

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

Significance of effect

9.9.124 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

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

Magnitude of impact

9.9.126 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 of sett locations on site.

9.9.127 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.

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

Significance of effect

9.9.129 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

9.9.130 It is considered that the sensitivity of the receptor is **very high** as the population of bats in the area around the Project is considered to be of international level of conservation importance, given the presence of two breeding Annex II species (Bechstein's and barbastelle) and has a low ability to recover.

Magnitude of impact

9.9.131 All landscape features that are used by foraging, commuting and roosting bats will be retained as part of the detailed design of the Project and protected with appropriate buffers and fencing during construction (as per **Table 9.8.1**).

9.9.132 The creation of some gaps in hedgerows around the Project site may have some short-term disturbance impacts on bat species using them, although, given the size of the majority of the gaps are <5 m, it is unlikely that this would cause a change in foraging/commuting habit in itself.

9.9.133 The arable fields across the site are considered to be of 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.

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

Significance of effect

9.9.135 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.

Decommissioning

Sensitivity of the receptor

9.9.136 It is considered that the sensitivity of the receptor is **very high** as the population of bats in the area around the Project is considered to be of international level of conservation importance, given the presence of two breeding Annex II species (Bechstein's and barbastelle) and has a low ability to recover.

Magnitude of impact

9.9.137 The nature of impacts during decommissioning on bats is likely to be similar to that during construction although no new gaps would be required within the hedgerow network to facilitate activities. All features that could be used by bats retained and protected with appropriate fencing.

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

Significance of effect

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

Terrestrial invertebrate assemblage

Construction phase

Sensitivity of the receptor

9.9.140 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

9.9.141 The impact is predicted to be limited in extent as woodlands, scrub, trees, ponds, watercourses and hedgerows are to be retained, with the exception of some areas of hedgerow to be removed during construction. This loss amounts to circa 1% of the total hedgerow resource on site.

9.9.142 Existing field margins will be protected for the most part by the 5 m buffer protecting hedgerows (see **Table 9.8.1**). However, in some locations, the existing field margins extend more than 5 m beyond hedgerows, where possible, these will be retained in the final design, but there may be some minor loss of total area.

9.9.143 The arable fields across the 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.

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

Significance of effect

9.9.145 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 **negligible**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.9.146 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

9.9.147 There will be no loss of invertebrate habitat retained from construction during decommissioning. The grassland to be created under the solar arrays would have provided significant new terrestrial habitat for invertebrates. At decommissioning, some of this will be damaged during the removal of panels from the Project site. Such impacts would also be short-term (<1 year).

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

Significance of effect

9.9.149 The magnitude of impact is deemed to be low 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

9.9.150 Dormouse have been identified as present within the Central Site Area and are considered likely to occur within the hedgerow network on the wider Project 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 is considered to be of county level conservation importance with a medium vulnerability to impacts and a relatively low ability to recover.

Magnitude of impact

9.9.151 Although all woodland features and the majority of hedgerows that could be used by foraging, commuting and nesting dormice will be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.8.1** above), with the exception of some areas of hedgerow to be removed during construction. This work will be undertaken under licence from Natural England following appropriate methodologies. This loss amounts to circa 1% of the total hedgerow resource on site.

9.9.152 The impact is therefore predicted to be small in scale but widespread. The magnitude of impact is therefore, considered to be **low**.

Significance of effect

9.9.153 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 adverse**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.9.154 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

9.9.155 No further hedgerow removal is necessary during decommissioning, with all features that could be used by this species retained and protected with appropriate fencing.

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

Significance of effect

9.9.157 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.

Reptiles

Construction phase

Sensitivity of the receptor

9.9.158 Low populations of slow worm, common lizard and grass snake have been identified as present within the Central Site Area and are considered likely to occur within the field margins and hedgerows of the wider Project site and surrounding woodland. It is considered that the sensitivity of the receptor is **medium** as the population of reptiles in the area around the Project is considered to be of county level conservation importance and has medium recoverability.

Magnitude of impact

9.9.159 Woodland, scrub and the majority of hedgerows that could be used by reptiles will be retained by the Project, with the exception of some areas of hedgerow to be removed during construction. This loss amounts to circa 1% of the total hedgerow resource on site.

9.9.160 Existing field margins will be protected for the most part by the 5 m buffer protecting hedgerows (see **Table 9.8.1**). However, in some locations, the existing field margins extend more than 5 m beyond hedgerows, where possible, these will be retained in the final design, but there may be some minor loss of total area.

9.9.161 All habitats that may support reptiles will be cleared sensitively with an ECoW present. Such clearance would comprise two stage strimming by hand of suitable habitat, directionally towards retained habitat.

9.9.162 The impact is therefore predicted to be small in scale but widespread. The magnitude of impact is therefore, considered to be **low**.

Significance of effect

9.9.163 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 adverse**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

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

Magnitude of impact

9.9.165 There will be no loss of reptile habitat retained from construction during decommissioning. The grassland to be created under the solar arrays would have provided significant new terrestrial habitat for invertebrates. At decommissioning, some of this will be damaged during the removal of panels from the Project site, although this would be controlled via an appropriate method statement under the Outline Decommissioning Plan **[EN010147/APP/7.6.4]** and reinstated post decommissioning. Such impacts would also be short-term (<1 year).

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

Significance of effect

9.9.167 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.

Arable Weeds

Construction phase

Sensitivity of the receptor

9.9.168 A total of 10 arable weed species were identified within the Project site including two species of conservation interest, corn mint (England Red List near-threatened) and dwarf spurge (Oxford BAP and Great Britain Red List vulnerable). These species were generally associated with field margins.

9.9.169 It is considered that the sensitivity of the receptor is **medium** as the arable weeds within the Project site are considered to be of county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.170 Existing field margins will be protected for the most part by the 5 m buffer protecting hedgerows (see **Table 9.8.1**). However, in some locations, the existing field margins extend more than 5 m beyond hedgerows, where possible, these will be retained in the final design, but there may be some minor loss of total area.

9.9.171 The impact is therefore predicted to be small in scale but widespread. The magnitude of impact is therefore, considered to be **low**.

Significance of effect

9.9.172 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 adverse**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.9.173 It is considered that the sensitivity of the receptor is **medium** as the arable weeds in the Project site are considered to be of county level conservation importance with medium vulnerability to impact and recoverability.

Magnitude of impact

9.9.174 Retained field margins will be protected by suitable buffers during decommissioning in accordance with the Outline Decommissioning Plan **[EN010147/APP/7.6.4]**.

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

Significance of effect

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

Notable Flora Species

Construction phase

Sensitivity of the receptor

9.9.177 Notable flora species identified within the Project site included bluebell (Schedule 8 WCA and an Oxford BAP species), field scabious (England Red List: near threatened), chicory (England Red List: vulnerable) and sainfoin (Great Britain Red List: vulnerable).

9.9.178 These species were associated hedgerows and field margins.

9.9.179 It is considered that the sensitivity of the receptor is **medium** as the notable flora species in the Project site are considered to be of county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.180 Hedgerows will be protected by a 5 m buffer (see **Table 9.8.1**). Existing field margins will be protected for the most part be protection of hedgerows, however, in some locations, the existing field margins extend more than 5 m beyond hedgerows, where possible, these will be retained in the final design, but there may be some minor loss of total area.

9.9.181 The impact is therefore predicted to be small in scale but widespread. The magnitude of impact is therefore, considered to be **low**.

Significance of effect

9.9.182 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 adverse**, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.9.183 It is considered that the sensitivity of the receptor is **medium** as the notable flora species in the Project site are considered to be of county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.184 Hedgerows and field margins will be protected by suitable buffers during decommissioning in accordance with the Outline Decommissioning Plan **[EN010147/APP/7.6.4]**.

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

Significance of effect

9.9.186 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.

Veteran Trees

Construction phase

Sensitivity of the receptor

9.9.187 Over sixty veteran trees and three veteran tree groups were recorded across the Project site. It is considered that the sensitivity of the receptor is **medium** as veteran trees are considered to be of county level conservation importance with medium vulnerability to impacts and relatively low recoverability.

Magnitude of impact

9.9.188 Veteran trees protection plans for veteran trees within and adjacent to construction areas are specified by the Strategic Arboriculture Impact and Method Statement (Volume 3, Appendix: 8.3). Buffer distances are 15 times stem diameter in accordance with Natural England and the Forestry Commission guidance (2022).

9.9.189 Protective fencing, in accordance with BS 5837, would be erected around veteran trees to prevent access by people, materials or machinery, thereby reducing the risk of accidental damage during construction activities.

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

Significance of effect

9.9.191 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

9.9.192 It is considered that the sensitivity of the receptor is **medium** as veteran trees are considered to be of county level conservation importance with medium vulnerability to impacts and relatively low recoverability.

Magnitude of impact

9.9.193 The nature of impacts during decommissioning on veteran trees will be similar to that during construction. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.194 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

9.9.195 Although no specific surveys have been undertaken for otter, they are known to occur along the River Evenlode and River Thames. 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.

9.9.196 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 with medium vulnerability to impacts and a relatively low ability to recover.

Magnitude of impact

9.9.197 All landscape features that could be used by foraging, commuting, breeding and resting otter will be retained as part of the design of the Project and

protected with appropriate buffers and fencing during construction (as set out in **Table 9.8.1** above).

9.9.198 The arable fields across the 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.

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

Significance of effect

9.9.200 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

9.9.201 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

9.9.202 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.

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

Significance of effect

9.9.204 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

9.9.205 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.

9.9.206 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 medium ability to recover.

Magnitude of impact

9.9.207 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.

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

Significance of effect

9.9.209 This would result in a short-term, low impact to a receptor of local value resulting in a **minor adverse** significance of effect and therefore not significant, which is not significant in EIA terms.

Decommissioning

Sensitivity of the receptor

9.9.210 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 medium ability to recover.

Magnitude of impact

9.9.211 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.

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

Significance of effect

9.9.213 This would result in a short-term, low impact to a receptor of local value resulting in a **minor adverse** significance of effect and therefore not significant, which is not significant in EIA terms.

The impact of habitat disturbance during construction, operations and maintenance and decommissioning of the Botley West Solar Farm

9.9.214 Construction, operations, maintenance and decommissioning of the Botley West Solar Farm 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 (including heavy machinery) and personnel that could cause the greatest impact and is summarised in **Table 9.7.1**.

Internationally Designated Sites

All phases

Sensitivity of the receptor

9.9.215 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 southeast of the Project.

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

Magnitude of impact

9.9.217 The Project is 1 km 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 will not result in any direct or indirect disturbance during any of the construction, operation nor decommissioning phases within any internationally designated site within the Zone of Influence.

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

Significance of effect

9.9.219 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

9.9.220 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated site 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 adjacent to the Thames. The SSSI's interest features include ancient woodland, wood pasture, common land and old limestone grassland supporting populations of nationally scarce butterfly species Black Hairstreak *Strymonidia pruni* and an exceptionally rich flora and fauna.

9.9.221 Blenheim Park SSSI is on the opposite side of the A4095 to the Project boundary. The SSSI's interest features include regionally important lakes for breeding and wintering birds and ancient oak-dominated pasture woodland supporting notable invertebrate assemblages.

9.9.222 Rushy Meadows SSSI occurs 650 m from the Project site boundary and is hydrologically linked to the Project site by Rowel Brook and an unnamed tributary that flows into Oxford Canal, which both pass the SSSI. The SSSI's

interest features include unimproved alluvial grasslands containing several uncommon species. Notable bird species occurring at this site include breeding snipe, grasshopper warbler and over-wintering water-rail.

9.9.223 Wytham Ditches and Flushes SSSI occurs 860 m from the Project site boundary and is hydrologically linked to the Project site by the Cassington Canal, River Evenlode and associated tributaries. These watercourses converge into the River Thames linked to the SSSI. The SSI's interest features include species-rich eutrophic aquatic and fen flora containing flowering plants which are now uncommon in central southern England and nationally scarce plant Greater Water-parsnip *Sium latifolium*.

9.9.224 Other sites identified within the desk study (Appendix 9.1) were scoped out due to their distance from the Project site and not containing potential impact pathways from the Project site.

9.9.225 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.

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

Magnitude of impact

9.9.227 The Project will not result in any direct or indirect disturbance during construction within all nationally designated sites within the Zone of Influence except Wytham Woods SSSI due to the distance between the Project and these sites.

9.9.228 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.

9.9.229 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

9.9.230 The magnitude of the impact is deemed to be negligible (Wytham Woods SSSI and Blenheim Park 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 and Blenheim Park SSSI only - all others would be no change)**, which is not significant in EIA terms.

Operation and maintenance

Sensitivity of the receptor

9.9.231 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

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

Significance of effect

9.9.233 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

9.9.234 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

9.9.235 The Project will not result in any direct or indirect disturbance during decommissioning within the majority of nationally designated sites within the Zone of Influence due to the distance between the Project and such sites (they are all >0.5 km 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**.

9.9.236 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

9.9.237 For the majority of nationally designated sites, 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.

9.9.238 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

9.9.239 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.

9.9.240 All locally-designated sites vary in their vulnerability to impacts 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).

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

Magnitude of impact

9.9.242 There may be other short-term noise disturbance impacts at the other locally designated sites that occur adjacent to the Project during construction from, for example, installation of cables and panels.

9.9.243 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 will affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **negligible**.

Significance of effect

9.9.244 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

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

Magnitude of impact

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

designated site within the Zone of Influence. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.247 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

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

Magnitude of impact

9.9.249 Similar to the Construction phase of the development, there may be some short-term disturbance impacts at some of the locally designated sites that occur near to the Project during decommissioning from vehicle and plant movement.

9.9.250 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 will affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **negligible**.

Significance of effect

9.9.251 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

9.9.252 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.

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

Magnitude of impact

9.9.254 The HDD of cables under Bladon Heath will result in short term disturbance from both noise and vibration as the HDD process take place. The remainder of the Project has been designed to avoid any areas of ancient woodland and all that occur adjacent to the project boundary will 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 boundary during Construction (see Appendix 9.1 Desk Study for locations of where Ancient Woodland occurs adjacent to the Project site).

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

Significance of effect

9.9.256 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

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

Magnitude of impact

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

Significance of effect

9.9.259 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

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

Magnitude of impact

9.9.261 Similar to the Construction phase of the development, there may be some short-term disturbance impacts at some of the ancient woodland that occur near to the Project during decommissioning from vehicle and plant movement. Cables laid under ancient woodland will be left in-situ to ensure no impacts are caused from their removal.

9.9.262 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 will affect the receptor indirectly. The magnitude of impact is, therefore, considered to be **negligible**.

Significance of effect

9.9.263 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

9.9.264 Areas of non-ancient broadleaved woodland HPI have been excluded from within the Project 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.

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

Magnitude of impact

9.9.266 The Project has been designed to avoid any areas of non-ancient 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 9.8.1** 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.

9.9.267 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

9.9.268 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

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

Magnitude of impact

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

Significance of effect

9.9.271 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

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

Magnitude of impact

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

9.9.274 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

9.9.275 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

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

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

Magnitude of impact

9.9.278 The HDD of cables under the floodplain meadow HPI west of Wytham Woods SSSI will result in short term disturbance from both noise and vibration as the HDD process take place.

9.9.279 The remainder of the Project has been designed to avoid areas of floodplain meadow. There could, however, be short-term disturbance from noise and vibration during construction in adjacent areas.

9.9.280 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

9.9.281 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

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

Magnitude of impact

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

Significance of effect

9.9.284 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

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

Magnitude of impact

9.9.286 As with construction, there could, be short-term disturbance from noise and vibration during decommissioning in adjacent areas. Cables laid under the HPI will be left in-situ to ensure no impacts are caused from their removal.

9.9.287 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

9.9.288 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

9.9.289 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.

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

Magnitude of impact

9.9.291 Any waterbody that occurs within the Project site or adjacent to it will be protected by a minimum of a 5 m (ponds) and) and 8 m buffer (watercourses, 10 m buffer for ordinary watercourses, in line with local bye-laws, where applicable), as set out in **Table 9.8.1** above. Installation of any cables that cross such features would be via HDD.

9.9.292 There may be some temporary noise and vibration disturbance of such habitats, during HDD activities and construction in adjacent areas.

9.9.293 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

9.9.294 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

9.9.295 The sensitivity of waterbodies is considered to be **high**.

Magnitude of impact

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

Significance of effect

9.9.297 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

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

Magnitude of impact

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

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

9.9.301 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

9.9.302 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

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

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

Magnitude of impact

9.9.305 The Project has been designed to retain the majority of hedgerow within the Project boundary with the majority of cable routes and site access routes to be via existing field accesses. A 5 m buffer will be maintained around all field boundary hedgerows to ensure their protection during construction (as set out in **Table 9.8.1**). Some installation of cables crossing hedgerows will be via HDD.

9.9.306 There may be indirect noise and vibration disturbance of hedgerows during HDD, vegetation removal and construction activities. Such disturbance

impacts are predicted to be short term (less than one year) and there will be no long-term disturbance.

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

Significance of effect

9.9.308 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

9.9.309 The sensitivity of hedgerows is considered to be **medium**.

Magnitude of impact

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

Significance of effect

9.9.311 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

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

Magnitude of impact

9.9.313 The decommissioning of the Project could result in similar short term disturbance to that which could occur during construction. Any cables laid under the HPI will be left in-situ to ensure no impacts are caused from their removal. 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

9.9.314 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.

Important Hedgerows

Construction phase

Sensitivity of the receptor

9.9.315 Important Hedgerows discussed in this chapter are hedgerows that are ecologically important, providing high value connectivity for 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.

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

Magnitude of impact

9.9.317 The Project has been designed to retain the majority of important hedgerow within the Project boundary with the majority of cable routes and site access routes to be via existing field accesses. A 5 m buffer will be maintained around all field boundary hedgerows to ensure their protection during construction (as set out in **Table 9.8.1**).

9.9.318 There may be indirect noise and vibration disturbance of important hedgerows during HDD, vegetation removal and construction activities. Such disturbance impacts are predicted to be short term (less than one year) and there will be no long-term disturbance.

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

Significance of effect

9.9.320 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

9.9.321 The sensitivity of hedgerows is considered to be **medium**.

Magnitude of impact

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

Significance of effect

9.9.323 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

9.9.324 The sensitivity of the important hedgerows is considered to be **medium**.

Magnitude of impact

9.9.325 The decommissioning of the Project could result in similar short term disturbance to that which could occur during construction. Any cables laid under important hedgerows will be left in-situ to ensure no impacts are caused from their removal. 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

9.9.326 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

9.9.327 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

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

9.9.329 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

9.9.330 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

9.9.331 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

9.9.332 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance during operation and maintenance within any breeding bird habitat within the Zone of Influence.

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

Significance of effect

9.9.334 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

9.9.335 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

9.9.336 There will 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 will not involve piling.

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

Significance of effect

9.9.338 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

9.9.339 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

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

9.9.341 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

9.9.342 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

9.9.343 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

9.9.344 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance during operation and maintenance within any wintering birds within the Zone of Influence. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.345 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

9.9.346 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

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

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

Significance of effect

9.9.349 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

9.9.350 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

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

9.9.352 A construction artificial light emissions plan is described within the oCoCP, it sets out how features that could be used by GCN will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by GCN.

9.9.353 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

9.9.354 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

9.9.355 The sensitivity of hedgerows is considered to be **medium**.

Magnitude of impact

9.9.356 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of any badger population within the Zone of Influence.

9.9.357 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and
- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.358 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto existing boundary features. Lighting will be directed downward and away from boundary features.

9.9.359 Lighting impacts will therefore be intermittent and localised lighting during the operational period.

9.9.360 As such, the impact is predicted to be negligible. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.361 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.

Decommissioning

Sensitivity of the receptor

9.9.362 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

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

9.9.364 The Outline Decommissioning Plan **[EN010147/APP/7.6.4]** includes an appropriate lighting strategy. It sets out how features that could be used by this 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 GCN.

9.9.365 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 **negligible**.

Significance of effect

9.9.366 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

9.9.367 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

9.9.368 Badger activity was spread across the majority of the Project site (Appendix 9.8: Badger Survey Report). 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 and the majority of hedgerows will be protected during construction with at least 5 m buffers and appropriate fencing as set out in **Table 9.8.1** above. As such, it is not anticipated that any sett will 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 and light disturbance of setts.

9.9.369 A construction artificial light emissions plan is described within the oCoCP, it sets out how features that could be used by badgers will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by badgers.

9.9.370 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.

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

Significance of effect

9.9.372 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.

Operations and maintenance

Sensitivity of the receptor

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

Magnitude of impact

9.9.374 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of any badger population within the Zone of Influence.

9.9.375 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and
- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.376 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto existing boundary features. Lighting will be directed downward and away from boundary features.

9.9.377 Lighting impacts will therefore be intermittent and localised during the operational period.

9.9.378 As such, the impact is predicted to be low. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.379 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.

Decommissioning

Sensitivity of the receptor

9.9.380 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

9.9.381 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 of badger sett locations on site. However, such disturbance is likely to be less than that experienced during construction as there will not be any piling.

9.9.382 The Outline Decommissioning Plan **[EN010147/APP/7.6.4]** includes an appropriate lighting strategy. It sets out how features that could be used by this 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 badger.

9.9.383 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.

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

Significance of effect

9.9.385 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

9.9.386 It is considered that the sensitivity of the receptor is **very high** as the population of bats in the area around the Project is considered to be of international level of conservation importance, given the presence of two breeding Annex II species (Bechstein's and barbastelle) and has a low ability to recover.

Magnitude of impact

9.9.387 All woodlands and watercourses, and the majority of hedgerows that could be used by foraging, commuting and roosting bats will be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.8.1**). A construction artificial light emissions plan will be described within the oCoCP, to be in general accordance 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.

9.9.388 It is possible that other short-term disturbance of commuting/foraging bats 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 are used by bats.

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

Significance of effect

9.9.390 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.

Operations and maintenance

Sensitivity of the receptor

9.9.391 The sensitivity of the bat assemblage is considered to be **very high**.

Magnitude of impact

9.9.392 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of any bat habitats within the Zone of Influence.

9.9.393 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and
- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.394 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto existing boundary features. Lighting will be directed downward and away from boundary features.

9.9.395 Lighting impacts will therefore be intermittent and localised during the operational period.

9.9.396 As such, the impact is predicted to be low. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

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

Decommissioning

Sensitivity of the receptor

9.9.398 It is considered that the sensitivity of the receptor is **very** high as the population of bats in the area around the Project is considered to be of international conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.9.399 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 will not be any piling.

9.9.400 All landscape features that could be used by foraging, commuting and roosting bats will be retained as part of the design of the Project and protected with appropriate buffers and fencing during decommissioning. The decommissioning lighting plan is detailed within an appropriate lighting strategy, in line with Institute of Lighting Professionals /Bat Conservation Trust guidelines. It sets 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.

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

Significance of effect

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

Terrestrial invertebrate assemblage

Construction phase

Sensitivity of the receptor

9.9.403 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 medium recoverability.

Magnitude of impact

9.9.404 It is possible that other short-term disturbance of invertebrates could take place due to noise/vibration during construction activities; however, this would be in-

part be minimised by the 5 m buffer protecting hedgerows (see **Table 9.8.1**). However, in few locations retained field margins extend more than 5 m beyond hedgerows.

9.9.405 A construction artificial light emissions plan is described within the oCoCP, it sets out how features will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by invertebrates.

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

Significance of effect

9.9.407 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

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

Magnitude of impact

9.9.409 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of any invertebrate habitats within the Zone of Influence.

9.9.410 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and
- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.411 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto invertebrate habitats. Lighting will be directed downward and away from boundary features.

9.9.412 Lighting impacts will therefore be intermittent and localised during the operational period.

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

Significance of effect

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

Decommissioning

Sensitivity of the receptor

9.9.415 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 medium recoverability.

Magnitude of impact

9.9.416 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.

9.9.417 The Outline Decommissioning Plan **[EN010147/APP/7.6.4]** includes an appropriate lighting strategy. It sets out how features that could be used by this 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 invertebrates.

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

Significance of effect

9.9.419 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.

Dormouse

Construction phase

Sensitivity of the receptor

9.9.420 Dormice have been identified using the hedgerow network on the Project Site and are likely to also use 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 is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.9.421 The majority of landscape features that could be used by foraging, commuting and nesting dormice (ie all woodland and the majority of hedgerows) will be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction (as set out in **Table 9.8.1**).

9.9.422 A construction artificial light emissions plan is described within the oCoCP, it sets out how features 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.

9.9.423 It is possible that other short-term disturbance of dormice 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 this species.

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

Significance of effect

9.9.425 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

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

Magnitude of impact

9.9.427 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of any dormouse population within the Zone of Influence.

9.9.428 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and
- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.429 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto dormouse habitats. Lighting will be directed downward and away from boundary features.

9.9.430 Lighting impacts will therefore be intermittent and localised during the operational period.

9.9.431 As such, the impact is predicted to be negligible. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.432 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.

Decommissioning

Sensitivity of the receptor

9.9.433 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

9.9.434 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.

9.9.435 All landscape features that could be used by this species will be retained as part of the design of the Project and protected with appropriate buffers and fencing during decommissioning. The Outline Decommissioning Plan **[EN010147/APP/7.6.4]** includes an appropriate lighting strategy. It sets out how features that could be used by this 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 dormice.

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

Significance of effect

9.9.437 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.

Reptiles

Construction phase

Sensitivity of the receptor

9.9.438 Low populations of slow worm, common lizard and grass snake have been identified as present within the Central Site Area and are considered likely to occur within the field margins and hedgerows of the wider Project site and surrounding woodland. It is considered that the sensitivity of the receptor is **medium** as the population of reptiles in the area around the Project is considered to be of county level conservation importance and has medium recoverability.

Magnitude of impact

9.9.439 Reptiles are sensitive to noise and vibration, as such when works are in proximity to reptile habitats, short-term disturbance could take place during construction activities. Retained hedgerows and woodland will be protected with appropriate buffers and fencing during construction (as set out in **Table 9.8.1**) in turn minimising the disturbance of reptile habitats. Impacts are expected to be localised and also be short-term (<1 year).

9.9.440 A construction artificial light emissions plan is described within the oCoCP, it sets out how features will be protected from light spill. Any task-specific lighting necessary during construction will be directional away from features that could be used by reptiles.

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

Significance of effect

9.9.442 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

9.9.443 The sensitivity of reptile populations is considered to be **medium**.

Magnitude of impact

9.9.444 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of any reptiles within the Zone of Influence.

9.9.445 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and
- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.446 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto reptile habitats. Lighting will be directed downward and away from reptile habitats.

9.9.447 Lighting impacts will therefore be intermittent and localised during the operational period.

9.9.448 As such, the impact is predicted to be negligible. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.449 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.

Decommissioning

Sensitivity of the receptor

9.9.450 The sensitivity of reptile populations is considered to be **medium**.

Magnitude of impact

9.9.451 The nature of impacts during decommissioning on reptiles is likely to be similar to that during construction.

9.9.452 The Outline Decommissioning Plan **[EN010147/APP/7.6.4]** includes an appropriate lighting strategy. It sets out how features that could be used by this 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 reptiles.

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

Significance of effect

9.9.454 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.

Arable Weeds

Construction phase

Sensitivity of the receptor

9.9.455 A total of 10 arable weed species were identified within the Project site including two species of conservation interest, corn mint (England Red List near-threatened) and dwarf spurge (Oxford BAP and Great Britain Red List vulnerable). These species were generally associated with field margins.

9.9.456 It is considered that the sensitivity of the receptor is **medium** as the arable weeds within the Project site are considered to be of local to county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.457 The majority of existing field margins will be protected by the 5 m buffer protecting hedgerows (see **Table 9.8.1**). It is not anticipated arable weeds species will be indirectly affected by the Project, considering the mitigation implemented under the oCoCP. Any impacts would be localised and short-term (<1 year).

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

Significance of effect

9.9.459 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.

Operation and maintenance

Sensitivity of the receptor

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

Magnitude of impact

9.9.461 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance during operation and maintenance to arable weeds within the Zone of Influence. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.462 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

9.9.463 The sensitivity of the arable weeds is considered to be **medium**.

Magnitude of impact

9.9.464 Similar to the construction phase of the development, it is not anticipated that arable weeds will be indirectly impacted by the Project, considering the mitigation implemented under the Outline Decommissioning Plan **[EN010147/APP/7.6.4]**. Any impacts would be localised and short-term (<1 year).

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

Significance of effect

9.9.466 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.

Notable Flora Species

Construction phase

Sensitivity of the receptor

9.9.467 Notable flora species identified within the Project site included bluebell (Schedule 8 WCA and an Oxford BAP species), field scabious (England Red List: near threatened), chicory (England Red List: vulnerable) and sainfoin (Great Britain Red List: vulnerable).

9.9.468 These species were associated hedgerows and field margins.

9.9.469 It is considered that the sensitivity of the receptor is **medium** as the notable flora species in the Project site are considered to be of county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.470 Hedgerows will be protected by a 5 m buffer (see **Table 9.8.1**). Existing field margins will be protected for the most part be protection of hedgerows.

9.9.471 It is not anticipated notable flora species will be indirectly affected by the Project, considering the mitigation implemented under the CoCP. Any impacts would be localised and short-term (<1 year).

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

Significance of effect

9.9.473 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.

Operation and maintenance

Sensitivity of the receptor

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

Magnitude of impact

9.9.475 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance during operation and maintenance to notable flora species within the Zone of Influence. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.476 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

9.9.477 The sensitivity of the notable flora species is considered to be **medium**.

Magnitude of impact

9.9.478 Similar to the construction phase of the development, it is not anticipated that notable flora species will be indirectly impacted by the Project, considering the mitigation implemented under the Outline Decommissioning Plan **[EN010147/APP/7.6.4]**. Any impacts would be localised and short-term (<1 year).

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

Significance of effect

9.9.480 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.

Veteran Trees

Construction phase

Sensitivity of the receptor

9.9.481 Over sixty veteran trees and three veteran tree groups were recorded across the Project site. It is considered that the sensitivity of the receptor is **medium** as veteran trees are considered to be of county level conservation importance with medium vulnerability to impacts and relatively low recoverability.

Magnitude of impact

9.9.482 Buffers of 15 times stem and protective fencing, in accordance with the Strategic Arboriculture Impact and Method Statement (Volume 3, Appendix: 8.3), will protect veteran trees within the Project site.

9.9.483 It is not anticipated veteran trees will be indirectly affected by the Project, considering the mitigation implemented under the CoCP. Any impacts would be localised and short-term (<1 year).

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

Significance of effect

9.9.485 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.

Operation and maintenance

Sensitivity of the receptor

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

Magnitude of impact

9.9.487 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance during operation and maintenance to veteran trees within the Zone of Influence. As such, the impact is predicted to be no change. The magnitude of impact is therefore, considered to be **no change**.

Significance of effect

9.9.488 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

9.9.489 It is considered that the sensitivity of the receptor is **medium** as veteran trees are considered to be of county level conservation importance with medium vulnerability to impacts and relatively low recoverability.

Magnitude of impact

9.9.490 Similar to the construction phase of the development, it is not anticipated that veteran trees will be indirectly impacted by the Project, considering the mitigation implemented under the Outline Decommissioning Plan **[EN010147/APP/7.6.4]**. Any impacts would be localised and short-term (<1 year).

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

Significance of effect

9.9.492 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 **negligible**, which is not significant in EIA terms.

Otter

Construction phase

Sensitivity of the receptor

9.9.493 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.

9.9.494 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 with medium vulnerability and has a relatively low ability to recover.

Magnitude of impact

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

9.9.496 A construction artificial light emissions plan is described within the oCoCP, it sets out how features 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.

9.9.497 It is possible that other short-term disturbance of otter could take place due to noise/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.

9.9.498 Any impacts are expected to be localised and also be short-term (<1 year).

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

Significance of effect

9.9.500 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

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

Magnitude of impact

9.9.502 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of any otter population within the Zone of Influence.

9.9.503 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and
- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.504 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto otter habitats. Lighting will be directed downward and away from otter habitats.

9.9.505 Lighting impacts will therefore be intermittent and localised during the operational period.

9.9.506 As such, the impact is predicted to be negligible. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.507 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.

Decommissioning

Sensitivity of the receptor

9.9.508 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

9.9.509 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.

9.9.510 The Outline Decommissioning Plan **[EN010147/APP/7.6.4]** includes an appropriate lighting strategy. It sets out how features that could be used by this 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 otter.

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

Significance of effect

9.9.512 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

9.9.513 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.

9.9.514 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

9.9.515 A construction artificial light emissions plan is described within the oCoCP, it sets out how features 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.

9.9.516 It is possible that other short-term disturbance of this receptor could take place due to noise/vibration during construction activities. Any impacts are expected to be localised and also be short-term (<1 year).

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

Significance of effect

9.9.518 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

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

Magnitude of impact

9.9.520 The Project is largely autonomous once operational and maintenance requirements are minimal. The Project will therefore not result in any direct or indirect disturbance from noise or vibration during operation and maintenance of brown hare and hedgehog within the Zone of Influence.

9.9.521 Lighting would only be the minimum required including:

- Solar PV Array and Transformers: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on and operated manually; and

- Electrical Compounds: combination of manually operated lighting and PIR motion sensor activated security / emergency lighting with no lights permanently switched on.

9.9.522 In accordance with the Outline Operational Management Plan, a sensitive lighting scheme will be developed ensuring inward distribution of light and avoiding light spill onto otter habitats. Lighting will be directed downward and away from habitats for these species.

9.9.523 Lighting impacts will therefore be intermittent and localised during the operational period.

9.9.524 As such, the impact is predicted to be negligible. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.525 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.

Decommissioning

Sensitivity of the receptor

9.9.526 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

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

9.9.528 The Outline Decommissioning Plan **[EN010147/APP/7.6.4]** includes an appropriate lighting strategy. It sets out how features that could be used by this 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 these species.

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

Significance of effect

9.9.530 This would result in a short-term, negligible and the sensitivity of receptor is considered to be low. The effect will therefore be **negligible** which is not significant in EIA terms.

The impact of pollution caused by accidental spills/contaminant release during construction and decommissioning of the Botley West Solar Farm

9.9.531 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 9.6.4

Construction

Sensitivity of receptors

9.9.532 The receptors in **Table 9.6.4** 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

9.9.533 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 9.8.1**.

9.9.534 Such measures are 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.

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

Significance of the effect

9.9.536 The magnitude of impact is deemed to be no change and the sensitivity of the receptors in **Table 9.6.4** 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

9.9.537 The receptors in **Table 9.6.4** 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

9.9.538 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 impact of pollution caused by accidental spills/contaminant release is likely to be similar.

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

Significance of the effect

9.9.540 The magnitude of impact is deemed to be no change and the sensitivity of the receptors in **Table 9.6.4** is considered to be low to very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

The impact of changes in air quality caused by dust release during construction and decommissioning of the Botley West Solar Farm

9.9.541 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 9.6.4

Construction

Sensitivity of receptors

9.9.542 The receptors in **Table 9.6.4** 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

9.9.543 An assessment of risk of dust generation impacts has been completed (Volume 1, Chapter 19: Air Quality). 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 (Volume 1, Chapter 19: Air Quality, Section 19.7), including the production of a Dust Management Plan (DMP). This is 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.

9.9.544 Once the implementation of the DMP is accounted for, the magnitude of impact is considered to be **no change**.

Significance of the effect

9.9.545 The magnitude of impact is deemed to be no change and the sensitivity of the receptors in **Table 9.6.4** 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

9.9.546 The receptors in **Table 9.6.4** 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

9.9.547 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.

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

Significance of the effect

9.9.549 The magnitude of impact is deemed to be negligible and the sensitivity of the receptors in **Table 9.6.4** is considered to be low to very high. The effect will, therefore, be **no change**, which is not significant in EIA terms.

The impact of vehicle emissions on habitats and species during construction and decommissioning of the Botley West Solar Farm

9.9.550 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.

9.9.551 As set out in Chapter 12 Traffic and Transport **[EN010147/APP/6.3]**, vehicle movements during the operational phase of the Project would typically comprise a single maintenance visit undertaken by a light vehicle (typically a 4x4) on at most a daily frequency. There are no other activities that could give rise to changes in air quality during the operation of the Project as it is largely autonomous.

9.9.552 On this basis, impacts from any changes in operational air quality are screened out.

All receptors in Table 9.6.4

Construction

Sensitivity of receptors

9.9.553 The receptors in **Table 9.6.4** 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

9.9.554 An assessment of the change in the flows of Heavy Goods Vehicles (HGV) arising as a result of the Project near to the site during construction has been undertaken (see Chapter 12 Traffic and Transport [EN010147/APP/6.3]). This shows that the change in HGV Average Annual Daily Traffic (AADT) flows on road links around the Project will be at most 125 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 AADT of 200 HGV movements (HA 2020).

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

Significance of the effect

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

Decommissioning

Sensitivity of receptors

9.9.557 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**.

Magnitude of impact

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

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

Significance of the effect

9.9.560 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** significance, which is not significant in EIA terms.

The impact of spreading Invasive and Non-native Species (INNS) during construction and decommissioning of the Botley West Solar Farm

9.9.561 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 MDS is represented by the greatest amount of land that will be disturbed and is summarised in **Table 9.7.1**.

9.9.562 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.

9.9.563 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 potentially replace or become dominant in those areas of habitat and change the community composition and structure.

9.9.564 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.

9.9.565 At this stage, one INNS, giant knotweed *Fallopia sachalinensis* has been identified within the Southern Site Area, north of Denman's Farm. The potential impacts from the spread of Giant knotweed and any other INNS, should they become present within the remainer of the Project site, is considered below.

All receptors in Table 9.6.4

Construction

Sensitivity of receptor

9.9.566 The receptors set out in **Table 9.6.4** 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

9.9.567 The majority of the Project site will 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

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

9.9.569 Only one INNS, at one location, has been identified on the Project site to date (giant knotweed *Fallopia sachalinensis* within the Southern Site Area, north of Denman's Farm). A method statement for the prevention of giant knotweed's spread and control will be will be included within the CoCP. Furthermore, if further INNS are identified during pre-commencement surveys, a method statement will be included within the CoCP to prevent their spread and control.

9.9.570 As such, considering the management of INNS within the Project site, the magnitude of impact is considered to be **no change**.

Significance of the effect

9.9.571 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

Sensitivity of the receptor

9.9.572 The sensitivity of the receptors is considered to be **low** to **very high**.

Magnitude of the impact

9.9.573 Decommissioning activities within the Project 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.

9.9.574 Given the management of INNS within the Project site, the magnitude of impact is considered to be **no change**.

Significance of the effect

9.9.575 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** significance, which is not significant in EIA terms.

The impact of habitat creation within the Botley West Solar Farm (all phases)

9.9.576 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 of Oxfordshire.

9.9.577 The Environment Act 2021 included provisions applying certain biodiversity net gain (BNG) requirements to the nationally significant infrastructure projects (NSIPs) regime. A BNG requirement is proposed to be imposed on NSIP projects from November 2025 , with the level of requirement detailed within a BNG statement(s) (subject to prior publication – currently expected to be November 2023, 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 of at least 70% Habitat BNG (see Biodiversity Net Gain Assessment Appendix 9.13 and oLEMP **[EN010147/APP/7.6.3]**.

9.9.578 The Illustrative Masterplan for the Project in Volume 2 of the ES **[EN010147/APP/6.4]** 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 to include significant new floodplain meadow HPI (circa 100 ha) and other wetland features. The goal is to create habitat of at least LWS status. This will help improve connectivity along this important commuting route between the woodland at Blenheim Palace and Wytham Woods;
- Grassland within the panel areas to be managed with conservation grazing to ensure a biodiverse sward is developed across the whole Project site;
- Wildflower meadow within parts of the Project site where areas of land are to be avoided to protect buried archaeology, as appropriate, managed specifically for the benefit of both breeding and wintering birds;
- 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 15 ha); and
- New hedgerow planting in strategic locations to link existing woodland (circa 26.5 km of new hedgerow) and the reinforcing of existing hedgerows (circa 22 km).

9.9.579 These features will be installed during the construction phase and their benefits will 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

9.9.580 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 1 km east of the Project.

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

Magnitude of impact

9.9.582 The Project is 1 km from the nearest internationally designated site. As a result of this distance, habitat creation within the Project will not result in any

measurable change within any internationally designated site within the Zone of Influence. The habitat to be created is not close enough to provide a meaningful benefit to these sites.

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

Significance of effect

9.9.584 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

9.9.585 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated site 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 adjacent to the Thames. The SSSI's interest features include ancient woodland, wood pasture, common land and old limestone grassland supporting populations of nationally scarce butterfly species Black Hairstreak *Strymonidia pruni* and an exceptionally rich flora and fauna.

9.9.586 Blenheim Park SSSI is on the opposite side of the A4095 to the Project boundary. The SSSI's interest features include regionally important lakes for breeding and wintering birds and ancient oak-dominated pasture woodland supporting notable invertebrate assemblages.

9.9.587 Rushy Meadows SSSI occurs 650 m from the Project site boundary and is hydrologically linked to the Project site by Rowel Brook and an unnamed tributary that flows into Oxford Canal, which both pass the SSSI. The SSSI's interest features include unimproved alluvial grasslands containing several uncommon species. Notable bird species occurring at this site include breeding snipe, grasshopper warbler and over-wintering water-rail.

9.9.588 Wytham Ditches and Flushes SSSI occurs 860 m from the Project site boundary and is hydrologically linked to the Project site by the Cassington Canal, River Evenlode and associated tributaries. These watercourses converge into the River Thames linked to the SSSI. The SSI's interest features include species-rich eutrophic aquatic and fen flora containing flowering plants which are now uncommon in central southern England and nationally scarce plant Greater Water-parsnip *Sium latifolium*.

9.9.589 Other sites identified within the desk study (Appendix 9.1) were scoped out due to their distance from the Project site and not containing potential impact pathways from the Project site.

9.9.590 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.

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

Magnitude of impact

9.9.592 The creation of new habitat forming a strategic link along the River Evenlode between the Blenheim Park SSSI and Wytham Woods SSSI will 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 will be long-term and beneficial.

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

Significance of effect

9.9.594 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

9.9.595 Locally designated sites are those considered to be of importance within the context of the county of Oxfordshire. A number of other locally designated sites occur adjacent to the Project boundary, including Sansoms Lane Green Lane CDDWS, Weavely Furze Firewood Allotments CDDWS, Smith Hill Copse LWS, Pinsley Wood LWS, Bladon Heath LWS, Burleigh Wood LWS, City Farm LWS and Denman's Copse PLWS.

9.9.596 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).

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

Magnitude of impact

9.9.598 The new habitat creation associated with the Project will 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 will be long-term and beneficial.

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

Significance of effect

9.9.600 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 positive**, which is significant in EIA terms.

Ancient woodland

Sensitivity of the receptor

9.9.601 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.

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

Magnitude of impact

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

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

Significance of effect

9.9.605 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

9.9.606 Areas of non-ancient broadleaved woodland HPI have been excluded from within the Project 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.

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

Magnitude of impact

9.9.608 The Project has been designed to include new woodland planting (circa 15 ha) both as screening for visual purposes and to provide ecology nodes within the landscape, increasing the area of woodland within the Project boundary by circa 150%.

9.9.609 This impact will be long-term and beneficial.

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

Significance of effect

9.9.611 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

9.9.612 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.

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

Magnitude of impact

9.9.614 The creation of circa 100 ha of new floodplain meadow HPI will form a key component of the River Evenlode enhancement corridor. This impact will therefore be long term and beneficial.

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

Significance of effect

9.9.616 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 **moderate beneficial**, which is significant in EIA terms.

Waterbodies (including ponds and watercourses HPIs)

Sensitivity of the receptor

9.9.617 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.

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

Magnitude of impact

9.9.619 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 will indirectly improve the water quality of the water courses in the area through the cessation of inputs of agricultural runoff (fertiliser, etc.).

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

Significance of effect

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

Hedgerows HPI

Sensitivity of the receptor

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

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

Magnitude of impact

9.9.624 The Project has been designed to include significant new hedgerow planting (circa 26.5 km). In addition, significant existing hedgerow lengths will be reinforced (an additional circa 22 km). This is a long term beneficial impact.

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

Significance of effect

9.9.626 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.

Important Hedgerows

Sensitivity of the receptor

9.9.627 Important Hedgerows discussed in this chapter are hedgerows that are ecologically important, providing high value connectivity for 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.

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

Magnitude of impact

9.9.629 The reinforcement of hedgerows by the Project (22 km) will likely immediately and significantly contribute to the sum of important hedgerows within the Project site.

9.9.630 Furthermore, the Projects planting of species rich hedgerows (26.5 km), in 30-years from their planting (the minimum age of a hedgerow to be considered ‘important’ under the Hedgerow Regulations 1997), will likely significantly contribute to the sum of important hedgerows in the Project site.

9.9.631 These are long term beneficial impacts.

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

Significance of effect

9.9.633 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.

Breeding bird assemblage

Sensitivity of the receptor

9.9.634 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

9.9.635 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 (including areas managed specifically for birds), enhanced floodplain meadow along the River Evenlode and significant new hedgerow and woodland planting will provide a more diverse variety of habitats post development.

9.9.636 Bird boxes will be placed within retained trees throughout the Project site. A range of box bird types will be utilised in order to provide nesting habitat for a range of bird species.

9.9.637 The impact of the habitat creation is therefore considered to be **medium**.

Significance of effect

9.9.638 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

9.9.639 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

9.9.640 The Project will include new habitat creation that will 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 will provide a more diverse variety of habitats post development.

9.9.641 Wildflower meadow grasslands will be managed specifically for wintering birds including wintering seed mixes to provide foraging resources for wintering birds. Furthermore, skylark plots have been incorporated in panel arrays areas to provided additional wintering bird foraging habitat across the Project site.

9.9.642 The impact of the habitat creation is therefore considered to be **Low**.

Significance of effect

9.9.643 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 beneficial** significance which is not significant in EIA terms.

Great crested newt

Sensitivity of the receptor

9.9.644 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

9.9.645 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 and, creation of new and reinforced hedgerows and woodland.

9.9.646 Hibernacula for GCN will be created within 500 m of ponds within and surrounding the site. Furthermore, log piles will be placed throughout wildflower meadows grasslands to create sheltering opportunities for GCN.

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

Significance of effect

9.9.648 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.

Badger

Sensitivity of the receptor

9.9.649 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

9.9.650 The Project will provide enhanced foraging habitat for badger via the creation of new grasslands within the panel arrays from formerly arable land and the creation of new/reinforced hedgerows and woodland. Appropriate mammal passes will be provided within all fencing surrounding the Project site to ensure that such habitat is available to badgers.

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

Significance of effect

9.9.652 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 beneficial** significance which is not significant in EIA terms.

Bat species assemblage

Sensitivity of the receptor

9.9.653 It is considered that the sensitivity of the receptor is **very high** as the population of bats in the area around the Project is considered to be of international conservation importance and has a low ability to recover.

Magnitude of impact

9.9.654 The Project will provide extensive new and enhanced commuting habitat for the local bat assemblage with 26.5 km of new hedgerow and a 22 km of reinforced hedgerows. Further, circa 15 ha of new woodland and new grasslands with no agricultural inputs and a greater botanic diversity will improve the invertebrate populations and hence foraging potential of the site for bats. In addition, the creation of the Evenlode Corridor will specifically benefit the barbastelle species using the Project site as flood meadow is a key foraging habitat for this species.

9.9.655 Bat boxes will be placed on retained trees throughout the Project site to provide additional roosting habitat. Where not enough suitable retained trees remain, bat boxes should be pole mounted.

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

Significance of effect

9.9.657 The magnitude of the impact is deemed to be medium 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.

Terrestrial invertebrate assemblage

Sensitivity of the receptor

9.9.658 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 medium recoverability.

Magnitude of impact

9.9.659 The Project will provide extensive new and enhanced habitat for the local invertebrate assemblage with over 26.5 km of new hedgerow and 22 km of reinforced hedgerows. Further, circa 15 ha of new woodland and new grasslands with no agricultural inputs and a greater botanic diversity will

increase the diversity of habitats present for invertebrates. The corridor along the River Evenlode will also be of value to invertebrates.

9.9.660 Beehives are to be included in wildflower meadow grasslands across the site to provide insects sheltering habitat. Furthermore, hibernacula and log piles created in meadow grasslands will be of value to invertebrates.

9.9.661 The impact is therefore predicted to be **medium**.

Significance of effect

9.9.662 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

9.9.663 Dormice have been identified within the hedgerow network on site and are considered likely to occur in 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 is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.9.664 The Project will create extensive new habitat for dormice with the provision of over 26.5 km of new hedgerow, 22 km of enhanced hedgerow and 15 ha of new woodland.

9.9.665 Hedgerow and woodland management will take place during winter when dormice are not active (i.e. from November until February).

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

Significance of effect

9.9.667 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.

Reptiles

Sensitivity of the receptor

9.9.668 It is considered that the sensitivity of the receptor is **medium** as the population of reptiles in the area around the Project is considered to be of county level conservation importance and have medium recoverability.

Magnitude of impact

9.9.669 The habitat creation associated with the Project site will provide new reptile habitat, improving the status of the habitat from arable land to grasslands. Field

margins will be enhanced with tussocky meadow grasslands species and archaeological areas will have meadow grasslands created.

9.9.670 Furthermore, log piles will be placed throughout meadow grasslands and hibernacula created for GCN will similarly provide habitat for reptiles.

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

Significance of effect

9.9.672 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.

Arable Weeds

Sensitivity of the receptor

9.9.673 A total of 10 arable weed species were identified within the Project site including two species of conservation interest, corn mint (England Red List near-threatened) and dwarf spurge (Oxford BAP and Great Britain Red List vulnerable). These species were generally associated with field margins.

9.9.674 It is considered that the sensitivity of the receptor is **medium** as the arable weeds within the Project site are considered to be of local to county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.675 Areas of the Project site will be managed as meadow grassland post construction. As such, it is anticipated that there would be some areas of the site still suitable for arable weeds, albeit that some require disturbance from farming activities (i.e., crop rotations, mixed farming, tillage) for their survival..

9.9.676 The impact of the habitat creation on this receptor is therefore is expected to be long-term; however, the continuing arable habitat surrounding the Project and the fact the arable weed populations are not large; the magnitude of impact is, therefore, is considered to be **low**.

Significance of effect

9.9.677 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 adverse**, which is not significant in EIA terms.

Notable Flora Species

Sensitivity of the receptor

9.9.678 Notable flora species identified within the Project site included bluebell (Schedule 8 WCA and an Oxford BAP species), field scabious (England Red

List: near threatened), chicory (England Red List: vulnerable) and sainfoin (Great Britain Red List: vulnerable).

9.9.679 These species were associated hedgerows and field margins.

9.9.680 It is considered that the sensitivity of the receptor is **medium** as the notable flora species in the Project site are considered to be of county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.681 Bluebell within the Project site was associated with hedgerows. This species habitat includes a wide variety of deciduous woodland types, hedgerows, shady banks, hay meadows and pastures, under bracken fern and coastal cliffs (Plant Atlas, 2020).

9.9.682 As part of pre-commencement surveys, the locations of bluebells within the Project will be updated. With suitable mitigation measures implemented during habitat creation to ensure bluebells are not picked, uprooted or destroyed.

9.9.683 Chicory within the Project site was generally associated with arable field margins. This species' habitat includes grassy banks and verges of paths, tracks and roads, but also on arable field margins, in rough grassland, on waste ground and riverbanks (Plant Atlas, 2020).

9.9.684 Field scabious within the Project site was generally associated with arable field margins. This species' habitat includes calcareous and neutral grassland on well-drained, especially basic soils. It is found in chalk and limestone grassland, in rough pasture, open hedgerows and wood borders, and as a colonist on roadside verges, railway embankments and grassy waste ground (Plant Atlas, 2020).

9.9.685 Sainfoin within the Project site was generally associated with arable field margins. This species' habitat includes chalk grassland, grassy banks, roadsides, arable margins, and by tracks on chalk and less often on other calcareous soils (Plant Atlas, 2020).

9.9.686 The implementation of the Illustrative Masterplan for the Project in Volume 2 of the ES **[EN010147/APP/6.4]** will see the majority of arable field margins enhanced to meadow and tussocky meadow grasslands. Considering the above habitat requirements of chicory, field scabious and sainfoin, habitat for these species will remain following habitat creation/enhancement. Furthermore, in accordance with the LEMP, grazing in these areas will be halted May to July to allow for these species' reproduction.

9.9.687 However, some intermittent disturbance of habitat for these species will be experienced during landscaping works.

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

Significance of effect

9.9.689 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.

Veteran Trees

Sensitivity of the receptor

9.9.690 Over sixty veteran trees and three veteran tree groups were recorded across the Project site. It is considered that the sensitivity of the receptor is **medium** as veteran trees are considered to be of county level conservation importance with medium vulnerability to impacts and relatively low recoverability.

Magnitude of impact

9.9.691 Appropriate buffers to veteran trees will be maintained during habitat management works. Where identified as required by suitably qualified arboricultural consultant, veteran trees may be managed in accordance with BS 3998:2010 and Ancient and other Veteran Trees: Further Guidance on Management (Lonsdale, 2013). The habitat creation around the veteran trees will ensure that the setting of these features is enhanced compared to the baseline, being both more sympathetic and with less pressure to prune dangerous limbs.

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

Significance of effect

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

Otter

Sensitivity of the receptor

9.9.694 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.

9.9.695 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

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

9.9.697 Minimum 8 m buffers to watercourses (10 m were local policy requires) will be in place during landscape works.

9.9.698 Given the home range of otters can be greater than 20 km, 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

9.9.699 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

9.9.700 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.

9.9.701 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

9.9.702 The new and enhanced hedgerows, new woodland and new modified grasslands, and enhanced meadow and tussocky grasslands across the site will provide enhanced habitat for brown hare and hedgehog through improved foraging and sheltering habitats.

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

Significance of effect

9.9.704 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.

The impact of habitat severance within the Botley West Solar Farm (construction phase)

9.9.705 The Project has been designed to retain the majority of linear habitat features (all water courses and woodlands and the majority of hedgerows). The loss of circa 666 m of hedgerow and other non-hedgerow linear features across 80 locations has the potential to result in changes to species' ability to move across the Project site. The perimeter of the Projects operational areas will be fenced during construction for operational security purposes, the height of the fence will range from 1.8 m to 2.1 m.

9.9.706 In addition, the presence of the solar farm may, of itself, change the ability of wildlife to move through the landscape.

Internationally Designated Sites

Sensitivity of the receptor

9.9.707 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 1 km east of the Project.

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

Magnitude of impact

9.9.709 The Project is 1 km from the nearest internationally designated site. As a result of this distance, there is no potential for habitat severance within any internationally designated site within the Zone of Influence.

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

Significance of effect

9.9.711 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

Sensitivity of the receptor

9.9.712 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 boundary.

9.9.713 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.

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

Magnitude of impact

9.9.715 The Project does not result in any change located between component areas of any nationally-designated site.

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

Significance of effect

9.9.717 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

Sensitivity of the receptor

9.9.718 Locally designated sites are those considered to be of importance within the context of the county of Oxfordshire. A number of 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.

9.9.719 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).

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

Magnitude of impact

9.9.721 The Project does not result in any change located between component areas of any locally-designated site.

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

Significance of effect

9.9.723 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

Sensitivity of the receptor

9.9.724 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.

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

Magnitude of impact

9.9.726 Although the Project will be located between several blocks of ancient woodland, the Project has been designed to ensure connectivity between these areas is maintained.

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

Significance of effect

9.9.728 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

Sensitivity of the receptor

9.9.729 Areas of non-ancient broadleaved woodland HPI have largely been excluded from within the Project 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.

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

Magnitude of impact

9.9.731 Although the Project will be located between several blocks of ancient woodland, the Project has been designed to ensure connectivity between these areas is maintained.

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

Significance of effect

9.9.733 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

Sensitivity of the receptor

9.9.734 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.

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

Magnitude of impact

9.9.736 The Project has been designed to ensure connectivity between areas of floodplain meadow HPI is maintained without any changes.

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

Significance of effect

9.9.738 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)

Sensitivity of the receptor

9.9.739 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.

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

Magnitude of impact

9.9.741 The Project has been designed to ensure connectivity between waterbodies is maintained without any changes.

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

Significance of effect

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

Hedgerows HPI

Sensitivity of the receptor

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

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

Magnitude of impact

9.9.746 The Project will result in the loss of circa 622 m of hedgerow HPI across 75 locations. The majority of these gaps are <3.5 m and average circa 8.5 m wide, the single largest is 70 m wide within the Southern Site Area for the national grid substation.

9.9.747 Overall, this will result in minor habitat severance since none of the hedgerows will be removed completely.

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

Significance of effect

9.9.749 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.

Important Hedgerows

Sensitivity of the receptor

9.9.750 Important Hedgerows discussed in this chapter are hedgerows that are ecologically important, providing high value connectivity for species such as hazel dormice and bats.

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

Magnitude of impact

9.9.752 The Project will result in the loss of circa 224 m of important hedgerows across 27 locations. The majority of these gaps are <5.5 m and average 8.5 m wide, the single largest is 55 m along the Stratfor Lane in the Northern Site Area.

9.9.753 Overall, this will result in minor habitat severance since none of the hedgerows will be removed completely.

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

Significance of effect

9.9.755 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

Sensitivity of the receptor

9.9.756 The Project site supports a range of breeding 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 **medium** (county) importance.

Magnitude of impact

9.9.757 The loss of hedgerows and arable land will result in very localised habitat severance; no hedgerows are to be removed completely and habitat connectivity between fields and therefore between the wider landscape would not be changed overall.

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

Significance of effect

9.9.759 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

Sensitivity of the receptor

9.9.760 The Project site supports a range of bird species of conservation importance during winter. The assemblage as a whole was sufficiently diverse to be of **medium** (county) importance.

Magnitude of impact

9.9.761 The loss of arable land will result in minor habitat severance for wintering bird species in so far as flocks would need to fly to surrounding arable fields. However, overall habitat connectivity between fields and therefore between the wider landscape would not be changed; the hedgerow network is retained and enforced and the Project includes the provision of circa 40ha of new grassland to be managed specifically for bird (both breeding and wintering) benefit.

9.9.762 It is not considered that the hypothesised 'lake effect', where birds mistake solar sites for water, is likely to change habitat connectivity. Natural England, in their review of the potential impacts of solar sites on ecology (Natural England 2017) did not identify collision risk as a significant issue and, as such, it is unlikely that birds using the wider landscape would be prevented from accessing other areas of the landscape by the Project.

9.9.763 The magnitude of impact is therefore, considered to be **low**, given the scale of the Project site**.**

Significance of effect

9.9.764 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.

Great crested newt

Sensitivity of the receptor

9.9.765 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

9.9.766 The loss of hedgerows will result in very localised habitat severance; no hedgerows are to be removed completely and habitat connectivity between fields and therefore between the wider landscape would not be changed overall.

9.9.767 The impact of any severance will be long term. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.768 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

Sensitivity of the receptor

9.9.769 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

9.9.770 The removal of hedgerows will not impact the ability of badger to move through the Project site as no hedgerows are to be removed completely. Connectivity through the site will be retained through the use of wildlife-permeable fencing.

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

Significance of effect

9.9.772 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 of **no change**.

Bat species assemblage

Sensitivity of the receptor

9.9.773 It is considered that the sensitivity of the receptor is **very high** as the population of bats in the area around the Project is considered to be of international conservation importance and has a low ability to recover.

Magnitude of impact

9.9.774 The impact of solar farm sites on bats has been the subject of recent research (Tinsley *et al*. 2023; Szabadi *et al*. 2023). This research suggests that there is a potential effect of solar panels on the ability of bats to forage through solar farms, with potential interactions between echolocation and solar panels. Such an effect could lead to bats avoiding fields with panels with associated severance impacts, preventing bats from commuting between roosts and foraging habitat. In order to ensure that such an effect does not occur, the Project will incorporate appropriate buffers along all important commuting habitat used by bats. The incorporation of such buffers will limit any severance impact, ensuring that bat species are still able to forage and commute across the Project site, post development. After the application of this mitigation, the magnitude of impact is therefore, considered to be **negligible.** The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

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

Terrestrial invertebrate assemblage

Sensitivity of the receptor

9.9.776 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 medium recoverability.

Magnitude of impact

9.9.777 The loss of hedgerows will result in very localised habitat severance; no hedgerows are to be removed completely and habitat connectivity between fields and therefore between the wider landscape would not be changed overall.

9.9.778 The impact is therefore predicted to be **negligible**.

Significance of effect

9.9.779 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

9.9.780 Dormice have been identified within the hedgerow network on site and are considered likely to occur in 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 is considered to be of county level conservation importance and has a relatively low ability to recover.

Magnitude of impact

9.9.781 The loss of hedgerows will result in very localised habitat severance; no hedgerows are to be removed completely and habitat connectivity between fields, and therefore between the wider landscape, would not be changed overall. However, the size of the majority of the gaps to be created (majority circa <3.5 m and average 8.5 m wide) is sufficient that dormice may not cross them (dormice are known to avoid gaps of circa 3 m, Bright, Morris & Mitchell Jones, 2006). As such, there may be some minor severance at a local scale.

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

Significance of effect

9.9.783 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 adverse**, which is not significant in EIA terms.

Reptiles

Sensitivity of the receptor

9.9.784 It is considered that the sensitivity of the receptor is **medium** as the population of reptiles in the area around the Project is considered to be of county level conservation importance and has medium recoverability.

Magnitude of impact

9.9.785 The loss of hedgerows will result in very localised habitat severance; no hedgerows are to be removed completely and habitat connectivity between fields and therefore between the wider landscape would not be changed overall.

9.9.786 The impact of any severance will be long term. The magnitude of impact is therefore, considered to be **negligible**.

Significance of effect

9.9.787 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.

Arable Weeds

Sensitivity of the receptor

9.9.788 It is considered that the sensitivity of the receptor is **medium** as the arable weeds within the Project site are considered to be of county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.789 It is not anticipated that the Project will cause severance of habitat used by arable weeds that is of a sufficient distance to cause more than a negligible effect to the connectivity of their habitat areas.

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

Significance of effect

9.9.791 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.

Notable Flora Species

Sensitivity of the receptor

9.9.792 It is considered that the sensitivity of the receptor is **medium** as the notable flora species in the Project site are considered to be of county level conservation importance with medium vulnerability to impacts and recoverability.

Magnitude of impact

9.9.793 It is not anticipated that the Project will cause severance of notable flora species that is of a sufficient distance to cause more than a negligible effect to the connectivity of their habitat areas.

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

Significance of effect

9.9.795 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.

Veteran Trees

Sensitivity of the receptor

9.9.796 It is considered that the sensitivity of the receptor is **medium** as veteran trees are considered to be of county level conservation importance with medium vulnerability to impacts and relatively low recoverability.

Magnitude of impact

9.9.797 It is not anticipated that the Project will cause severance of veteran trees that is of a sufficient distance to cause more than a negligible effect to the connectivity of veteran trees and their associated habitats.

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

Significance of effect

9.9.799 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.

Otter

Sensitivity of the receptor

9.9.800 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.

9.9.801 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

9.9.802 Given the home range of otters can be greater than 20 km, it is unlikely that the such changes would therefore change the way that otter used the Project site or the wider landscape. Furthermore, connectivity throughout Project site will be maintained through the use of wildlife-permeable fencing.

9.9.803 As such, the magnitude of impact is considered to be **negligible**.

Significance of effect

9.9.804 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

9.9.805 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.

9.9.806 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

9.9.807 The removal of hedgerows will not impact the ability of brown hare and hedgehog to move through the Project site as no hedgerows are to be removed completely. Connectivity through the site will be retained through the use of wildlife-permeable fencing.

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

Significance of effect

9.9.809 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 of **no change,** which is not significant in EIA terms.

9.10 Future monitoring

9.10.1 A Monitoring plan with respect to ecology will be developed in conjunction with stakeholders. Draft details are provided in the oLEMP [**EN010147/APP/7.6.3**].

9.10.2

9.10.3 **Table** 9.10.1 outlines the proposed monitoring for the Project to test the predictions of the impact assessment. However, these may be expanded upon to ensure compliance with any EPS licence monitoring requirements.

9.10.4 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.

9.10.5 **Table 9.10.1** below outlines the proposed monitoring commitments.

Table 9.10.1: Monitoring commitments

Commitment number	Measure adopted	How the measure will be secured
9.13	Monitoring of GCN populations in habitat creation and enhancement areas.	Requirement in DCO Monitoring mitigation in EPS licence
9.14	Monitoring of badger populations if any setts require closure	Requirement in DCO Monitoring mitigation in protected species licence
9.15	Monitoring of dormouse as a result of hedgerow works.	Requirement in DCO Monitoring mitigation in protected species licence
	Monitoring of bird populations, both wintering and breeding	Requirement in DCO
	Monitoring of habitats in habitat creation and enhancement areas identified with respect to BNG.	Requirement in DCO

9.11 Cumulative Effects

9.11.1 The Ecology Cumulative Effects Assessment (CEA) methodology has followed the methodology set out in Volume 1, Chapter 20: Cumulative Effects. 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; and
  - 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:

  - EIA Scoping report has been submitted.
- Tier 3:
  - EIA Scoping report has not been submitted;
  - Identified in the relevant Development Plan; and
  - Identified in other plans and programmes.

9.11.2 For clarity, cumulative effects with the generation assets are considered first:

- Botley West Solar Farm.

9.11.3 This assessment is followed by all other relevant projects, identified by tier.

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

9.11.5 Projects were initially scoped in based on geographical proximity to the Order Limits (within 5 km).

9.11.6 A further exercise was undertaken to scope projects in or out of further consideration. Of these 54 projects described in Chapter 20, six Tier 1 projects were scoped into the CEA for consideration for ecology and nature conservation, based on their size, nature and/or position. The specific projects, plans and activities scoped into the CEA, are outlined in **Table 9.11.1**.

9.11.7 No other projects are likely to have the potential to result in significant cumulative effects for this topic.

Table 9.11.1: 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	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Project
Tier 1						
20/01734/OUT	Pending	Adjacent	Salt Cross Garden Village, 2,200 dwellings and 40ha of employment land. 215ha in size on arable fields.	2024-2037	2024 onwards	Yes
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.	2017-2025	2017 onwards	Yes
20/01817/FUL	Under construction	Adjacent	Land Between Woodstock Sewage Works And B4027 - Solar Farm, 5MW generating capacity on 9.1ha of land on arable fields	2021-2024	2024-2059	Yes
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.	2024-2030	Unknown	Yes

21/00189/FUL	Permitted	1.0	Land north of Hill Rise, Woodstock, 180 dwellings (Appeal allowed Oct 23). 11ha on primarily arable land with some rough grassland.	2024-2026	2026 onwards	Yes
21/00217/OUT	Pending	0.3	Land north of Banbury Road, Woodstock, 235 dwellings with community space and car barns. 17ha on arable land.	2025-2030	2030 onwards	Yes

Maximum design scenario – cumulative effects assessment

9.11.8 The maximum design scenarios identified in **Table 9.11.2** 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 ES 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 (e.g., different foundation type or substation layout), to that assessed here, be taken forward in the final design scheme.

9.11.9 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/projects have been calculated to date. These will be assessed in the ES and are not discussed further in this assessment.

Table 9.11.2 Maximum design scenario for the assessment of cumulative effects

Potential cumulative effect	Phase			Maximum Design Scenario	Justification
	C	O	D		
The impact of temporary and permanent habitat loss during construction and decommissioning of the Project	✓	x	✓	Maximum design scenario as described for the Project **Table 9.7.1** assessed cumulatively with the following other projects/plans: **Tier 1** • A20/01734/OUT • 20/01817/FUL • 21/03522/OUT • 21/00189/FUL • 21/00217/OUT	Only Tier 1 schemes within 5 km of the Project that involve building upon undisturbed land (greenfield) been included. Those plans 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 projects greater than 5 km 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. . All Tier 1 plans have been considered as the CEA will be greatest if all of this land is lost to development.
The impact of habitat disturbance during construction, operations and maintenance and decommissioning of the Project	✓	✓	✓	Maximum design scenario as described for the Project (**Table 9.7.1**) assessed cumulatively with the following other projects/plans: **Tier 1** • A20/01734/OUT • 16/01364/OUT • 20/01817/FUL • 21/03522/OUT • 21/00189/FUL	All Tier 1 and Tier 2 plans within 5 km of the Project are considered as disturbance travels beyond the source point and is dependent upon the ZoI of the IEF's involved within the ES assessment.

- 21/00217/OUT

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

9.12 Cumulative effects assessment

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

9.12.2 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.

9.12.3 In total, six 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. Two projects are currently under construction from previously arable land, one is a solar generating station (planning ref 20/01817/FUL) and the other is a residential development (planning ref 16/01364/OUT), both are assumed to be completed before the Project construction commences. Outline details of each are provided below.

9.12.4 Where overlap between the construction phase for the Project and the construction of nearby developments is likely, the MDS 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.

9.12.5 All developments proposed 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.

9.12.6 In addition, given that the cumulative 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.

9.12.7 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.

20/01734/OUT Salt Cross Garden Village

9.12.8 The Salt Cross Garden Village application comprises 2,200 dwellings and 40 ha of employment land. The site covers some 215 ha adjacent to the Project 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.

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

16/01364/OUT

9.12.10 This project comprises 300 residential dwellings and up to 1100 m^2 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).

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

20/01817/FUL

9.12.12 Solar Farm, 5MW generating capacity on 9.1 ha 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.

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

21/03522/OUT

9.12.14 This project comprises up to 540 residential dwellings and other supporting development on circa 60 ha 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.

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

21/00189/FUL

9.12.16 Land north of Hill Rise, Woodstock comprising 180 dwellings (appeal allowed Oct 23) on 11 ha 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.

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

21/00217/OUT

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

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

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

Tier 1 projects

Breeding bird assemblage

Sensitivity of the receptor

9.12.20 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 interest.

Magnitude of impact

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

9.12.22 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 (>1,400 ha) is much larger than the combined area of the other Tier 1 projects considered here.

9.12.23 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.24 The significance of effect is, therefore, unchanged by the cumulative effect.

Wintering bird assemblage

Sensitivity of the receptor

9.12.25 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

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

9.12.27 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 (>1,400 ha) is much larger than the combined area of the other Tier 1 projects considered here.

9.12.28 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.29 The significance of effect is, therefore, unchanged by the cumulative effect.

Great crested newt

Sensitivity of the receptor

9.12.30 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

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

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

9.12.33 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.

9.12.34 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.35 The significance of effect is, therefore, unchanged by the cumulative effect.

Badger

Sensitivity of the receptor

9.12.36 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

9.12.37 Badger activity was spread across the majority of the Project site (Appendix 9.8: 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 50 ha with main setts at least 500 m apart. As such, there would also be no impact from habitat loss result in any clans being forced into each other's territory.

9.12.38 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.39 The significance of effect is, therefore, unchanged by the cumulative effect.

Bat Species Assemblage

Sensitivity of the receptor

9.12.40 It is considered that the sensitivity of the receptor is **very high** as the population of bats in the area around the Project is considered to be of international level of conservation importance, given the presence of two breeding Annex II species (Bechstein's and barbastelle) and has a low ability to recover.

Magnitude of impact

9.12.41 The creation of some gaps in hedgerows around the Project site may have some short-term disturbance impacts on bat species using them, although, given the size of the majority of the gaps are <5 m, it is unlikely that this would cause a change in foraging/commuting habits in itself.

9.12.42 The arable fields across the 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.

9.12.43 Two of the Tier 1 projects identified above supported barbastelle bats (16/01364/OUT and 21/00189/FUL). 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 (>1,400 ha) is much larger than the combined area of the other two Tier 1 projects considered here.

9.12.44 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.45 The significance of effect is, therefore, unchanged by the cumulative effect.

Dormouse

Sensitivity of the receptor

9.12.46 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 with medium vulnerability to impacts and a relatively low ability to recover.

Magnitude of impact

9.12.47 Dormouse were identified within the Central Site Area and are considered likely to occur within the hedgerow network on the wider Project site and the surrounding woodland.

9.12.48 The woodland features and the majority of hedgerows that could be used by foraging, commuting and nesting dormice will be retained and protected by the project. This work will be undertaken under licence from Natural England following appropriate methodologies. This loss amounts to circa 1% of the total hedgerow resource on site.

9.12.49 One other 20/01817/FUL tier 1 project supported dormice, which contains hedgerows bounding the Project site. This project set out the necessary mitigation to address any impacts and reduce the residual effect to not significant. The scale of the Project (>1,400 ha) is much larger than the project considered here.

9.12.50 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.51 The significance of effect is, therefore, unchanged by the cumulative effect.

Reptiles

Sensitivity of the receptor

9.12.52 Low populations of slow worm, common lizard and grass snake have been identified as present within the Central Site Area and are considered likely to occur within the field margins and hedgerows of the wider Project site and surrounding woodland.

9.12.53 It is considered that the sensitivity of the receptor is **medium** as the population of reptiles in the Project are considered to be of county level conservation importance and has medium recoverability.

Magnitude of impact

9.12.54 Woodland, scrub and the majority of hedgerows and field margins that could be used by reptiles will be retained and protected by the Project. All habitats

that may support reptiles will be cleared sensitively with an ECoW present. Such clearance would comprise two stage strimming by hand of suitable habitat, directionally towards retained habitat.

9.12.55 Three of the Tier 1 projects identified above supported populations of reptiles (20/01817/FUL, 21/03522/OUT and 21/00189/FUL). 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 (>1,400 ha) is much larger than the combined area of the other three Tier 1 projects considered here.

9.12.56 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.57 The significance of effect is, therefore, unchanged by the cumulative effect.

Terrestrial invertebrate assemblage

Sensitivity of the receptor

9.12.58 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

9.12.59 The impact is predicted to be limited in extent as woodlands, scrub, trees, ponds, watercourses and the majority of hedgerows and field margins will be retained and protected.

9.12.60 The arable fields across the site are considered to be of very low value to invertebrates and the loss of such habitat during construction is unlikely to have any impact on the local population.

9.12.61 Given the similar habitat present within the sites of the other Tier 1 projects identified, it is likely that similar invertebrate assemblages were/are present. However, the scale of the Project (>1,400 ha) is much larger than the combined area of the other three Tier 1 projects considered here.

9.12.62 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.63 The significance of effect is, therefore, unchanged by the cumulative effect.

Brown hare and hedgehog

Sensitivity of the receptor

9.12.64 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.

9.12.65 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

9.12.66 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 the majority of hedgerows and field margins would be retained and protected.

9.12.67 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, the potential for combined effects that exceed those already identified is likely to be minimal.

9.12.68 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.69 The significance of effect is, therefore, unchanged by the cumulative effect.

The impact of habitat disturbance during construction of the Project

Tier 1 projects

9.12.70 Construction, operations, maintenance and decommissioning of the Botley West Solar Farm 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

9.12.71 Nationally designated sites are those of the highest ecological value within the UK. The nearest nationally designated site 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 adjacent to the Thames. The SSSI's interest features include ancient woodland, wood pasture, common land and old limestone grassland supporting populations of nationally scarce butterfly species Black Hairstreak *Strymonidia pruni* and an exceptionally rich flora and fauna.

9.12.72 Blenheim Park SSSI is on the opposite side of the A4095 to the Project boundary. The SSSI's interest features include regionally important lakes for

breeding and wintering birds and ancient oak-dominated pasture woodland supporting notable invertebrate assemblages.

9.12.73 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.

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

Magnitude of impact

9.12.75 The Project will not result in any direct or indirect disturbance during construction within the majority of nationally designated site within the Zone of Influence due to the distance between the Project and these sites.

9.12.76 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.

9.12.77 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.

9.12.78 These impacts would be short term (<1 year) and very localised.

9.12.79 None of the Tier 1 projects are located within 1 km of Wytham Woods SSSI. Therefore, it is considered no cumulative impacts are likely possible to this SSSI.

9.12.80 Three of the Tier 1 projects residential development projects are located within 1 km of Blenheim Park SSSI with the construction of one (21/00217/OUT) overlapping with that of the Project. The only construction effect arising from the Project near to the SSSI is related to habitat creation, cumulative impacts from disturbance are therefore considered unlikely.

9.12.81 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.82 The significance of effect is, therefore, unchanged by the cumulative effect.

Locally Designated Sites

Sensitivity of the receptor

9.12.83 Locally designated sites are those considered to be of importance within the context of the county of Oxfordshire. A number of other locally designated sites occur adjacent to the Project boundary.

9.12.84 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).

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

Magnitude of impact

9.12.86 There may be short-term noise disturbance impacts at some of the locally designated sites that occur near to the Project during construction.

9.12.87 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.

9.12.88 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.89 The significance of effect is, therefore, unchanged by the cumulative effect.

Ancient woodland

Sensitivity of the receptor

9.12.90 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.

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

Magnitude of impact

9.12.92 The Project has been designed to avoid any areas of ancient woodland and all that occur adjacent to the project boundary will be protected by a minimum of 15 m buffer as per **Table 9.8.1** above. There may be some short-term disturbance of areas of ancient woodland that occur near to the Project boundary during Construction.

9.12.93 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 will affect the receptor indirectly.

9.12.94 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.95 The significance of effect is, therefore, unchanged by the cumulative effect.

Broadleaved woodland HPI

Sensitivity of the receptor

9.12.96 Areas of non-ancient broadleaved woodland HPI have been excluded from within the Project 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.

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

Magnitude of impact

9.12.98 The Project has been designed to avoid any areas of woodland and all that occur adjacent to the project boundary will be protected by a minimum of a 5 m buffer as per **Table 9.8.1** 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.

9.12.99 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.

9.12.100 The disturbance impact is therefore predicted to be short term (less than one year) and there will be no long-term disturbance.

9.12.101 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.102 The significance of effect is, therefore, unchanged by the cumulative effect.

Floodplain Meadow HPI

Sensitivity of the receptor

9.12.103 Areas of floodplain meadow HPI occur within the Project site adjacent to the River Evenlode.

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

Magnitude of impact

9.12.105 The Project has been designed to avoid areas utilising trenchless techniques to pass under floodplain meadow. There could, however, be short-term disturbance from noise and vibration during construction.

9.12.106 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 will affect the receptor indirectly.

9.12.107 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.108 The significance of effect is, therefore, unchanged by the cumulative effect.

Waterbodies (including ponds and watercourses HPIs)

Sensitivity of the receptor

9.12.109 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.

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

Magnitude of impact

9.12.111 Any waterbody that occurs within the Project site or adjacent to it will be protected by a minimum of a 5 m (ponds) and) and 8 m buffer (watercourses, 10 m buffer for ordinary watercourses, in line with local bye-laws, where applicable). Installation of any cables that cross such features would be via HDD.

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

9.12.113 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 100 m south of the Hanborough Stream which joins the River Evenlode east of Cassington.

9.12.114 The disturbance impact is predicted to be short term (less than one year) and riparian habitats will not be impacted in the long term.

9.12.115 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.116 The significance of effect is, therefore, unchanged by the cumulative effect.

Hedgerows HPI

Sensitivity of the receptor

9.12.117 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.

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

Magnitude of impact

9.12.119 The Project has been designed to retain and protect the majority of hedgerow within the Project boundary with the majority of 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.

9.12.120 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 will be no long-term disturbance.

9.12.121 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 17.6 km of hedgerow of which 2.6 km was to be lost. Although disturbance of this habitat is not assessed directly, it is likely to be locally high.

9.12.122 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.

9.12.123 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.124 The significance of effect is, therefore, unchanged by the cumulative effect.

Important Hedgerows

Sensitivity of the receptor

9.12.125 Important 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.

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

Magnitude of impact

9.12.127 The Project has been designed to the majority of important hedgerow within the Project boundary with the majority of 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 important hedgerows to ensure their protection during construction.

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

9.12.129 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) has not assessed the importance of hedgerows; however, stated that a number of hedgerows on site could potentially qualify as important hedgerows. Although disturbance important hedgerows is not assessed it is likely to be moderate.

9.12.130 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

important hedgerows and the species they support above that already assessed.

9.12.131 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.132 The significance of effect is, therefore, unchanged by the cumulative effect.

Breeding bird assemblage

Sensitivity of the receptor

9.12.133 The 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 **medium** (county) importance.

Magnitude of impact

9.12.134 The Project will result in the loss of arable habitat used by some breeding bird species although woodlands and the majority of hedgerows will 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 will be no long-term disturbance.

9.12.135 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 (>1,400 ha) is much larger than the combined area of the other Tier 1 projects considered here.

9.12.136 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.137 The significance of effect is, therefore, unchanged by the cumulative effect.

Wintering bird assemblage

Sensitivity of the receptor

9.12.138 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

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

However, 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 will be no long-term disturbance.

9.12.140 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 (>1,400 ha) is much larger than the combined area of the other Tier 1 projects considered here.

9.12.141 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.142 The significance of effect is, therefore, unchanged by the cumulative effect.

Great crested newt

Sensitivity of the receptor

9.12.143 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

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

9.12.145 The disturbance impact from the Project 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.

9.12.146 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 250 m 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.

9.12.147 Given the proximity of these development sites to the Project (most are adjacent to the Project boundary), it is possible that there will 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.

9.12.148 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.149 The significance of effect is, therefore, unchanged by the cumulative effect.

Badger

Sensitivity of the receptor

9.12.150 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

9.12.151 Badger activity was spread across the majority of the Project site (Appendix 9.8: 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 and most of the hedgerows will be retained and protected during construction with at least 5 m buffers and appropriate fencing as set out in **Table 9.8.1** above. As such, it is not anticipated that any sett will 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.

9.12.152 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 (>1 km) 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 50 ha with main setts at least 500 m apart. As such, there would also be no impact from habitat loss result in any clans being forced into each other's territory.

9.12.153 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.154 The significance of effect is, therefore, unchanged by the cumulative effect.

Bat species assemblage

Sensitivity of the receptor

9.12.155 It is considered that the sensitivity of the receptor is **very high** as the population of bats in the area around the Project is considered to be of international level of conservation importance, given the presence of two breeding Annex II species (Bechstein's and barbastelle) and has a low ability to recover.

Magnitude of impact

9.12.156 All woodlands and watercourses, and the majority of hedgerows that could be used by foraging, commuting and roosting bats will be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction. A construction artificial light emissions plan will be described within the oCoCP, to be in general accordance 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.

9.12.157 It is possible that other short-term disturbance of commuting/foraging bats 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 are used by bats.

9.12.158 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.

9.12.159 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.

9.12.160 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.161 The significance of effect is, therefore, unchanged by the cumulative effect.

Terrestrial invertebrate assemblage

Sensitivity of the receptor

9.12.162 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

9.12.163 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.

9.12.164 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.

9.12.165 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.

9.12.166 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.167 The significance of effect is, therefore, unchanged by the cumulative effect.

Dormouse

Sensitivity of the receptor

9.12.168 Dormice have been identified on site. 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

9.12.169 The majority of landscape features that could be used by foraging, commuting and nesting dormice (ie all woodland and the majority of hedgerows) will be retained as part of the design of the Project and protected with appropriate buffers and fencing during construction.

9.12.170 A construction artificial light emissions plan is described within the oCoCP, it sets out how features 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.

9.12.171 It is possible that other short-term disturbance of dormice 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 this species.

9.12.172 All Tier 1 projects expected to be under construction at the time of the Project considered here did not identify dormice as present on site.

9.12.173 A solar farm project (21/00189/FUL) identified dormice and its operational period coincides with the of the Project; however, this project set out the necessary mitigation to address such impacts and reduce the residual effect to not significant. The scale of the Project (>1,400 ha) is much larger than the combined area of the project considered here.

9.12.174 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.175 The significance of effect is, therefore, unchanged by the cumulative effect.

Otter

Sensitivity of the receptor

9.12.176 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.

9.12.177 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

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

9.12.179 A construction artificial light emissions plan is described within the oCoCP, it sets out how features 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.

9.12.180 It is possible that other short-term disturbance of otter could take place due to noise/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.

9.12.181 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.

9.12.182 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.183 The significance of effect is, therefore, unchanged by the cumulative effect.

Brown hare and hedgehog

Sensitivity of the receptor

9.12.184 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.

9.12.185 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

9.12.186 A construction artificial light emissions plan is described within the oCoCP, it sets out how features 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.

9.12.187 It is possible that other short-term disturbance of this receptor could take place due to noise/vibration during construction activities. Any impacts are expected to be localised and also be short-term (<1 year).

9.12.188 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 and the scale of the Project (>1,400 ha).

9.12.189 As such, the magnitude of impact is unchanged by the cumulative impact.

Significance of effect

9.12.190 The significance of effect is, therefore, unchanged by the cumulative effect.

9.13 Future monitoring

9.13.1 Future monitoring remains as per **Section 9.10**.

9.14 Transboundary effects

9.14.1 As per the scoping report, it was concluded that the proposed development is unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State (EEA states) and therefore a transboundary assessment is not proposed in the ES.

9.15 Inter-related effects

9.15.1 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.

9.15.2 A description of the likely interactive effects arising from the Project on ecology is provided in Volume 1, Chapter 20: Cumulative Effects and Inter-relationships of the ES.

9.15.3 **Table 9.15.1** lists the inter-related effects (project lifetime effects) that are predicted to arise during the construction, operational and maintenance and decommissioning phases of the Project, and also the inter-related effects (receptor-led effects) that are predicted to arise for ecology and nature conservation receptors.

Table 9.15.1: Summary of likely significant inter-related effects

Description of impact	Phase C	O	D	Likely significant inter-related effects	Significance
Potential impacts of habitat loss, disturbance, pollution, contamination, air quality, vehicle emissions, Invasive, Non-native Species (INNS), severance and habitat creation on habitats and species.	✓	✓	✓	Following the implementation of measures adopted as part of the Project, project lifetime effects would be no greater than those experienced during the construction phase of the Project. It is anticipated that the habitat creation during operation will continue into the decommissioning phase and beyond. However, the decommissioning impacts such as disturbance are likely to be no greater than those during construction.	No change.
Receptor-led effects					
There is potential for receptor led effects associated with ecology and nature conservation. There is also potential for receptor led effects associated with the noise/ vibration, air quality and hydrology chapters. Mitigation such as trenchless techniques and appropriate management of any trenchless installations would therefore not result in any significant hydrological impacts, such as fragmentation of ordinary watercourses which, in turn, could impact habitats of principal importance and protected species. The mitigation measures incorporated into the project commitments will ensure that these impacts are fully mitigated, and mitigation is complementary to both receptors. For the receptor led effects, overall, it is unlikely that receptors would experience increased significance of inter-related effects than that which has already been reported in the individual chapters for the identified receptors. Therefore, there is no change in the significance of effects resulting from the inter-related assessment.					

9.16 Summary of impacts, mitigation measures and monitoring

9.16.1 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.

9.16.2 **Table 9.16.1** 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;
- 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 severance.

9.16.3 Overall, it is concluded that there will be likely significant effects arising from the Project during the construction, operation and maintenance or decommissioning phases, including the below adverse:

- Temporary and permanent habitat loss during construction on Wintering Birds;

9.16.4 And the below beneficial:

- Habitat creation during construction on Nationally Designated Sites;
- Habitat creation during construction on Locally Designated Sites;
- Habitat creation during construction on Ancient Woodland;
- Habitat creation during construction on Floodplain Meadow HPI;
- Habitat creation during construction on Waterbodies HPI;
- Habitat creation during construction on Hedgerows HPI;
- Habitat creation during construction on Important Hedgerows;
- Habitat creation during construction on Breeding Birds;
- Habitat creation during construction on GCN;
- Habitat creation during construction on Bat Species Assemblage; and
- Habitat creation during construction on Dormice; and
- Habitat creation during construction on Reptiles.

9.16.5 **Table 9.16.1** presents a summary of the potential cumulative impacts, mitigation measures and residual effects. The cumulative impacts assessed include:

- The impact of temporary and permanent habitat loss; and
- The impact of habitat disturbance.

9.16.6 Overall, it is concluded that there will be no likely significant cumulative effects from the Project alongside other projects/plans.

9.16.7 No potential likely significant transboundary impacts on the ecology of an EEA State have been identified in regard to effects of the Project.

Table 9.16.1: Summary of potential environmental effects, mitigation and monitoring.

Description of impact	Phase C	O	D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
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 Broadleaved woodland HPI C: M D: M	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 Floodplain meadow HPI 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	

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		Floodplain meadow HPI C: NC D: NC Hedgerows HPI C: L D: NC Important Hedgerows C: L D: NC Waterbodies HPI C: NC D: NC Breeding bird assemblage C: L D: L Wintering bird assemblage C: M	Floodplain meadow HPI C: M D: M Hedgerows HPI C: M D: M Important Hedgerows C: M D: M Waterbodies HPI C: H D: H Breeding bird assemblage C: M D: M Wintering bird assemblage C: M	Hedgerows HPI C: MA D: NC Important Hedgerows C: MA D: NC Waterbodies HPI C: NC D: NC Breeding bird assemblage C: MA D: MA Wintering bird assemblage C: ModA D: MA Great crested newt C: MA D: MA Badger		D: NC Floodplain meadow HPI C: NC D: NC Hedgerows HPI C: MA D: NC Important Hedgerows C: MA D: NC Waterbodies HPI C: NC D: NC Breeding bird assemblage C: MA D: MA	

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		D: L	D: M	C: MA D: MA		Wintering bird assemblage C: ModA D: MA	
		Great crested newt C: L D: L	Great crested newt C: M D: M	Bat species assemblage C: MA D: MA		Great crested newt C: MA D: MA	
		Badger C: L D: L	Badger C: L D: L	Terrestrial invertebrate species assemblage C: N D: N		Badger C: MA D: MA	
		Bat species assemblage C: N D: N	Bat species assemblage C: VH D: VH	Dormice C: MA D: NC		Bat species assemblage C: MA D: MA	
		Terrestrial invertebrate species assemblage C: L D: L	Terrestrial invertebrate species assemblage C: L D: L	Reptiles C: MA D: MA		Terrestrial invertebrate species assemblage C: N D: N	
		Dormice C: L D: NC	Dormice C: M D: M	Arable Weeds C: MA D: NC		Dormice	
		Reptiles		Notable flora C: MA			

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		C: L D: L Arable Weeds C: L D: NC Notable flora C: L D: NC Veteran Trees C: NC D: NC Otter C: NC D: NC Brown hare and hedgehog C: L D: L	Reptiles C: M D: M Arable Weeds C: M D: M Notable flora C: M D: M Veteran Trees C: M D: M Otter C: M D: M Brown hare and hedgehog C: L D: L	D: NC Veteran Trees C: NC D: NC Otter C: NC D: NC Brown hare and hedgehog C: MA D: MA		C: MA D: NC Reptiles C: MA D: MA Arable Weeds C: MA D: NC Notable flora C: MA D: NC Veteran Trees C: NC D: NC Otter C: NC D: NC	

Description of impact	Phase C	O	D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
								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 and Blenheim Park SSSIs only) O: NC D: NC Locally designated sites C: N O: NC D: N Ancient woodland	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	Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: MA (Wytham Woods and Blenheim Park SSSIs only) O: NC D: NC Locally designated sites C: MA O: NC D: MA Ancient woodland C: MA O: NC D: MA		Internationally designated sites C: NC O: NC D: NC Nationally designated sites C: MA (Wytham Woods and Blenheim Park SSSIs only) O: NC D: NC Locally designated sites C: MA	

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		C: N O: NC 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 Important Hedgerows C: N O: NC D: N	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 Important Hedgerows C: M O: M D: M Waterbodies HPI	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 Important Hedgerows C: MA O: NC D: MA Waterbodies HPI C: MA O: NC D: MA		O: NC 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	

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
			C: H	Breeding bird assemblage			
		Waterbodies HPI	O: H	C: MA		Important Hedgerows	
		C: N	D: H	O: NC		C: MA	
		O: NC		D: N		O: NC	
		D: N	Breeding bird assemblage			D: MA	
			C: M	Wintering bird assemblage			
		Breeding bird assemblage	O: M	C: MA		Waterbodies	
		C: L	D: M	O: NC		C: MA	
		O: NC		D: N		O: NC	
		D: N	Wintering bird assemblage			D: MA	
			C: M	Great crested newt			
		Wintering bird assemblage	O: M	C: MA		Breeding bird assemblage	
		C: L	D: M	O: N		C: MA	
		O: NC		D: N		O: NC	
		D: N	Great crested newt			D: N	
			C: M	Badger			
		Great crested newt	O: M	C: MA		Wintering bird assemblage	
		C: L	D: M	O: N		C: MA	
		O: N		D: N		O: NC	
		D: N	Badger			D: N	
			C: L	Bat species assemblage			
		Badger	O: L	C: MA		Great crested newt	
		C: L	D: L	O: MA			
		O: N		D: MA			

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		D: N Bat species assemblage C: N O: N D: N Terrestrial invertebrate species assemblage C: N O: N D: N Dormice C: N O: N D: N Reptiles C: N O: N D: N Arable Weeds	Bat species assemblage C: VH O: VH D: VH Terrestrial invertebrate species assemblage C: L O: L D: L Dormice C: M O: M D: M Reptiles C: M O: M D: M Arable Weeds C: M	Terrestrial invertebrate species assemblage C: N O: N D: N Dormice C: N O: N D: N Reptiles C: N O: N D: N Arable Weeds C: N O NC D: N Notable flora C: N O: NC D: N		C: MA O: N D: N Badger C: MA O: N D: N Bat species assemblage C: MA O: MA D: MA Terrestrial invertebrate species assemblage C: N O: N D: N Dormice C: N O: N	

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		C: N O: NC D: N Notable flora C: N O: NC D: N Veteran Trees C: N O: NC D: N Otter: C: N O: N D: N Brown hare and hedgehog C: N O: N D: N	O: M D: M Notable flora C: M O: M D: M Veteran Trees C: M O: M D: M Otter: C:M O: M D: M Brown hare and hedgehog C: L O: L D: L	Veteran Trees C: N O: NC D: N Otter: C: N O: N D: N Brown hare and hedgehog C: N O: N D: N		D: N Reptiles C: N O: N D: N Arable Weeds C: N O: NC D: N Notable flora C: N O: NC D: N Veteran Trees C: N O: NC D: N Otter:	

Description of impact	Phase C	O	D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
								C: N O: N D: N Brown hare and hedgehog C: N O: N D: N	
The impact of pollution caused by accidental spills/contaminant release during constructions and decommissioning of the Project	✓			✓ All receptors: C: NC D: NC	All receptors: C: L-VH D: L-VH	All receptors: C: NC D: NC		All receptors: C: NC D: NC	
The impact of changes in air quality caused by dust release during construction and decommissioning of the Project	✓	✓		All receptors: C: NC D: NC	All receptors: C: L-VH D: L-VH	All receptors: C: NC D: NC	All receptors: C: NC D: NC		
The impact of spreading Invasive and Non-native Species (INNS) during construction	✓	✓		All receptors: C: NC D: NC	All receptors: C: L-VH D: L-VH	All receptors: C: NC D: NC	All receptors: C: NC D: NC		

Description of impact	Phase C	O	D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
and decommissioning of the Project									
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 C: M Hedgerows HPI	Internationally designated sites C: VH Nationally designated sites C: VH Locally designated sites C: VH Ancient woodland C: VH Broadleaved woodland HPI C: M Floodplain meadow HPI C: M Hedgerows HPI	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 C: ModB Hedgerows HPI C: ModB Important Hedgerows C: ModB		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 C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		C: M	C: M	Waterbodies HPI C: ModB		C: ModB	
		Important Hedgerows C: M	Important Hedgerows C: M	Breeding bird assemblage C: ModB		Hedgerows HPI C: ModB	
		Waterbodies HPI C: L	Waterbodies HPI C: H	Wintering bird assemblage C: MB		Important Hedgerows C: ModB	
		Breeding bird assemblage C: M	Breeding bird assemblage C: M	Great crested newt C: ModB		Waterbodies HPI C: ModB	
		Wintering bird assemblage C: L	Wintering bird assemblage C: M	Badger C: MB		Breeding bird assemblage C: ModB	
		Great crested newt C: M	Great crested newt C: M	Bat species assemblage C: ModB		Wintering bird assemblage C: MB	
		Badger C: M	Badger C: L	Terrestrial invertebrate species assemblage C: MB		Great crested newt C: ModB	
		Bat species assemblage	Bat species assemblage	Dormice C: ModB			

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		C: M	C: VH			Badger C: MB	
		Terrestrial invertebrate species assemblage C: M	Terrestrial invertebrate species assemblage C: L	Reptiles C: ModB Arable Weeds C: MA		Bat species assemblage C: ModB	
		Dormice C: M	Dormice C: M	Notable flora C: MB Veteran Trees C: MB		Terrestrial invertebrate species assemblage C: MB	
		Reptiles C: M	Reptiles C: M	Otter: C: MB		Dormice C: ModB	
		Arable Weeds C: L	Arable Weeds C: M	Brown hare and hedgehog C: MB		Reptiles C: ModB	
		Notable flora C: L Veteran Trees C: L	Notable flora C: M Veteran Trees C: M			Arable Weeds C: MA	
		Otter: C: L	Otter: C: M			Notable flora C: MB Veteran Trees	
		Brown hare and hedgehog					

Description of impact	Phase C	O	D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
				C: L	Brown hare and hedgehog C: L			C: MB Otter: C:MB Brown hare and hedgehog C: MB	
The impact of emissions from vehicle movements during constructions and decommissioning of the Project	✓		✓	All receptors: C: NC D: NC	All receptors: C: L-VH D: L-VH	All receptors: C: NC D: NC		All receptors: C: NC D: NC	
The impact of habitat severance during construction with the Project	✓	Internationally designated sites C: NC Nationally designated sites C: NC	Internationally designated sites C: VH Nationally designated sites C: VH	Internationally designated sites C: NC Nationally designated sites C: NC		Internationally designated sites C: NC Nationally designated sites C: NC			

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
			Locally designated sites C: NC	Locally designated sites C: NC			
		Locally designated sites C: NC	Ancient woodland C: NC	Ancient woodland C: NC			
		Ancient woodland C: NC	Broadleaved woodland HPI C: NC	Broadleaved woodland HPI C: NC			
		Broadleaved woodland HPI C: NC	Floodplain meadow HPI C: NC	Floodplain meadow HPI C: NC			
		Floodplain meadow HPI C: NC	Hedgerows HPI C: MA	Hedgerows HPI C: MA			
		Hedgerows HPI C: L	Important Hedgerows C: MA	Important Hedgerows C: MA			
		Important Hedgerows C: L	Waterbodies HPI C: NC	Waterbodies HPI C: NC			
		Locally designated sites C: NC	Locally designated sites C: VH				
		Ancient woodland C: NC	Ancient woodland C: VH				
		Broadleaved woodland HPI C: NC	Broadleaved woodland HPI C: M				
		Floodplain meadow HPI C: NC	Floodplain meadow HPI C: M				
		Hedgerows HPI C: L	Hedgerows HPI C: M				
		Important Hedgerows C: L	Important Hedgerows C: M				

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		Waterbodies HPI C: NC	Waterbodies HPI C: H	Breeding bird assemblage C: MA	Breeding bird assemblage C: MA		
		Breeding bird assemblage C: L	Breeding bird assemblage C: M	Wintering bird assemblage C: MA	Wintering bird assemblage C: MA		
		Wintering bird assemblage C: L	Wintering bird assemblage C: M	Great crested newt C: N	Great crested newt C: N		
		Great crested newt C: N	Great crested newt C: M	Badger C: NC	Badger C: NC		
		Badger C: NC	Badger C: L	Bat species assemblage C: MA	Bat species assemblage C: MA		
		Bat species assemblage C: N	Bat species assemblage C: VH	Terrestrial invertebrate species assemblage C: N	Terrestrial invertebrate species assemblage C: N		
		Terrestrial invertebrate	Terrestrial invertebrate	Dormice C: MA	Dormice C: MA		

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		species assemblage C: N	species assemblage C: L	Reptiles C: N		Reptiles C: N	
		Dormice C: L	Dormice C: M	Arable Weeds C: N		Arable Weeds C: N	
		Reptiles C: M	Reptiles C: M	Notable flora C: N		Notable flora C: N	
		Arable Weeds C: N	Arable Weeds C: M	Veteran Trees C: N		Veteran Trees C: N	
		Notable flora C: N	Notable flora C: M	Otter: C: N		Otter: C:N	
		Veteran Trees C: N	Veteran Trees C: M	Brown hare and hedgehog C: NC		Brown hare and hedgehog C: NC	
		Otter: C: N	Otter: C: M				

Description of impact	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		Brown hare and hedgehog C: NC	Brown hare and hedgehog C: L				

[a] C=construction, O=operational and maintenance, D=decommissioning, M – medium, N – Negligible, L – Low, VH – Very High, H – High, MA – Minor Adverse, ModB – Moderate Adverse, NC – No Change, MB – Minor Beneficial, ModB – Moderate Beneficial.

Table 9.16.2: Summary of potential cumulative environmental effects, mitigation and monitoring.

Description of effect	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
The impact of temporary and permanent habitat loss during construction of the Project	✓	Breeding birds C: L	Breeding birds C: M	Breeding birds C: MA		Breeding birds C: MA	
		Wintering birds C: M	Wintering birds C: M	Wintering birds C: ModA		Wintering birds C: ModA	
		Great crested newt C: L	Great crested newt C: M	Great crested newt C: MA		Great crested newt C: MA	
		Badger C: L	Badger C: L	Badger C: MA		Badger C: L	
		Bat species assemblage C: N	Bat species assemblage C: VH	Bat species assemblage C: MA		Bat species assemblage C: MA	

Description of effect	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		Dormice: C: L	Dormice: C: M	Dormice: C: MA		Dormice: C: MA	
		Reptiles C: L	Reptiles C: M	Reptiles: C: MA		Reptiles: C: MA	
		Terrestrial invertebrates C: L	Terrestrial invertebrates C: L	Terrestrial invertebrates C: N		Terrestrial invertebrates C: N	
		Brown hare and hedgehog C: L	Brown hare and hedgehog C: L	Brown hare and hedgehog C: MA		Brown hare and hedgehog C: MA	
The impact of habitat disturbance during construction of the Project	✓	Nationally designated sites C: N	Nationally designated sites C: VH	Nationally designated sites C: MA (Wytham Woods and Blenheim Park SSSIs only)		Nationally designated sites C: MA (Wytham Woods and Blenheim Park SSSIs only)	
		Locally designated sites C: N	Locally designated sites C: VH	Locally designated sites C: MA		Locally designated sites C: MA	
		Ancient woodland C: N	Ancient woodland C: VH	Ancient woodland C: MA		Ancient woodland C: MA	
		Broadleaved woodland HPI	Broadleaved woodland HPI	Broadleaved woodland HPI		Broadleaved woodland HPI	

Description of effect	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		C: N	C: M	C: MA		C: MA	
		Floodplain Meadow HPI C: N	Floodplain Meadow HPI C: M	Floodplain Meadow HPI C: MA		Floodplain Meadow HPI C: MA	
		Hedgerows HPI C: N	Hedgerows HPI C: M	Hedgerows HPI C: MA		Hedgerows HPI C: MA	
		Important Hedgerows C: N	Important Hedgerows C: M	Important Hedgerows C: MA		Important Hedgerows C: MA	
		Waterbodies HPI C: N	Waterbodies HPI C: H	Waterbodies HPI C: MA		Waterbodies C: MA	
		Breeding bird assemblage C: L	Breeding bird assemblage C: M	Breeding bird assemblage C: MA		Breeding bird assemblage C: MA	
		Wintering bird assemblage C: L	Wintering bird assemblage C: M	Wintering bird assemblage C: MA		Wintering bird assemblage C: MA	
		Great crested newt C: L	Great crested newt C: M	Great crested newt C: MA		Great crested newt C: MA	

Description of effect	Phase C O D	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
		Badger C: L	Badger C: L	Badger C: MA		Badger C: MA	
		Bat species assemblage C: N	Bat species assemblage C: VH	Bat species assemblage C: MA		Bat species assemblage C: MA	
		Terrestrial invertebrate species assemblage C: N	Terrestrial invertebrate species assemblage C: L	Terrestrial invertebrate species assemblage C: N		Terrestrial invertebrate species assemblage C: N	
		Dormice C: N	Dormice C: M	Dormice C: N		Dormice C: N	
		Otter: C: N	Otter: C: M	Otter: C: N		Otter: C: N	
		Brown hare and hedgehog C: N	Brown hare and hedgehog C: L	Brown hare and hedgehog C: N		Brown hare and hedgehog C: N	

[a] C=construction, O=operational and maintenance, D=decommissioning, M – medium, N – Negligible, L – Low, VH – Very High, H – High, MA – Minor Adverse, ModB – Moderate Adverse, NC – No Change.

9.17 References

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