Fosse Green Energy

EN010154

6.1 Environmental Statement

Chapter 8: Ecology and Nature Conservation (Tracked)

Planning Act 2008 (as amended)

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)

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Planning Act 2008

The Infrastructure Planning
(Applications: Prescribed Forms and
Procedure) Regulation 2009 (as amended)

Fosse Green Energy

Development Consent Order 202[ ]

6.1 Environmental Statement

Chapter 8: Ecology and Nature Conservation

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8. Ecology and Nature Conservation

8.1 Introduction

8.1.1 This Chapter of the ES presents the findings of an assessment of the potential significant effects of the construction, operational (including maintenance), and decommissioning phases of the Proposed Development on ecology and nature conservation (collectively referred to as biodiversity). The assessment follows the methods outlined in the **Scoping Report** (**Appendix 1-A** of this **ES [EN010154/APP/6.3]**) and is based on information on biodiversity obtained through desk studies and field surveys. The indicative design is presented in **Figure 3-2A: Indicative Fixed South Facing Layout Plan** and **3-2B: Indicative Single Axis Tracker Layout [EN010154/APP/6.2]** and described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**.

8.1.2 Effects on biodiversity from infrastructure projects can arise from direct and indirect impacts upon designated sites, habitats and, or species, and be of a temporary or permanent nature. Indirect effects can occur through pollution of air and water and via changes in lighting, noise, or hydrology. This Chapter is therefore supported by information contained within the following Chapters of this ES **[EN010154/APP/6.1]**:

a. **Chapter 6: Climate Change**;
b. **Chapter 9: Water Environment** (which includes hydrology and water pollution);
c. **Chapter 10: Landscape and Visual Amenity** (which includes lighting);
d. **Chapter 11: Noise and Vibration**; and
e. **Chapter 14: Other Environmental Topics** (including air quality).

8.1.3 This Chapter should also be read in conjunction with **Chapters 1** to **5** of this ES **[EN010154/APP/6.1],** which include a description of the Proposed Development (**Chapter 3**), alternatives and design evolution of the Proposed Development (**Chapter 4**), and the EIA Methodology (**Chapter 5**).

8.1.4 This Chapter is supported by the following figures in this ES **[EN010154/APP/6.2]**:

a. **Figure 8-1: Sites statutorily designated for their biodiversity value**;
b. **Figure 8-2: Sites non-statutorily designated for their biodiversity value**;
c. **Figure 8-3: Location of Ancient Woodland and Priority Habitats identified during the desk study**;
d. **Figure 8-4: Habitat Map (drawn to UKHab)**; and
e. **Figure 8-5: Bird Mitigation Land Allocation.**

8.1.5 This Chapter is supported by the following technical appendices **[EN010154/APP/6.3]**, which include full details of the study areas, survey methods, survey dates and guidance used for each survey:

a. **Appendix 8-A: Ecology Legislation, Planning Policy Context and Guidance**;
b. **Appendix 8-B: Terrestrial Habitats and Notable Flora**;
c. **Appendix 8-C: Aquatic Ecology**;
d. **Appendix 8-D: Terrestrial Invertebrates**;
e. **Appendix 8-E: Great Crested Newt**;
f. **Appendix 8-F: Reptiles and Common Toad**;
g. **Appendix 8-G: Breeding Birds**;
h. **Appendix 8-H: Non-Breeding Birds**;
i. **Appendix 8-I: Bats;**
j. **Appendix 8-J: Riparian Mammals**; and
k. **Appendix 8-K: Badger**.

8.1.6 The baseline report for Badger *Meles meles* is not included in full, owing to the sensitivities of detailing information on the location of Badger setts and risk of illegal persecution. Therefore, the results, evaluation and conclusions section of **Appendix 8-K: Badger** of this ES **[EN010154/APP/6.3]**, including any figures presenting the locations of any Badger activity, will be provided confidentially to the Planning Inspectorate and relevant stakeholders with a legitimate interest. Similarly, where specially protected breeding bird species (owing to inclusion on Schedule 1 of the Wildlife and Countryside Act (WCA), 1981 (Ref 8-1)) have been recorded, the results, evaluation and conclusions section of **Appendix 8-G: Breeding Birds** of this ES **[EN010154/APP/6.3]**, including any figures presenting the locations of any territories of specially protected bird species, will also be provided confidentially to the Planning Inspectorate and relevant stakeholders.

8.1.7 A **Framework Construction Environmental Management Plan** (**Framework CEMP**) **[EN010154/APP/7.7]**, **Framework Operational Environmental Management Plan** (**Framework OEMP**) **[EN010154/APP/7.8]** and a **Framework Decommissioning Environmental Management Plan** (**Framework DEMP**) **[EN010154/APP/7.9]** have been prepared for the Proposed Development to manage environmental effects of the Proposed Development and to demonstrate compliance with environmental legislation.

8.1.8 This Chapter is also supported by a **Framework Landscape and Ecological Management Plan** (**Framework LEMP**) **[EN010154/APP/7.15],** the purpose of which is to set out the key measures required to avoid, mitigate, and compensate for impacts and effects to biodiversity (and landscape) from the construction and operation of the Proposed Development. The **Framework LEMP [EN010154/APP/7.15]** also provides management prescriptions aimed

at ensuring the Proposed Development delivers a net gain for biodiversity over the lifespan of the Proposed Development and includes targeted landscape and biodiversity mitigation that are incorporated into the Proposed Development design.

8.1.9 In addition, a standalone **Biodiversity Net Gain Report [EN010154/APP/7.12]** has been prepared for submission with the DCO application.

8.2 Legislation and Planning Policy

8.2.1 A summary of applicable legislation, planning policy, and other guidance documents relating to biodiversity and relevant to the Proposed Development is provided below.

8.2.2 Full details of the legislation, policy, and guidance of relevance to the assessment of significant biodiversity effects of the Proposed Development is provided in full in **Appendix 8-A: Ecology Legislation, Planning Policy Context and Guidance** of this ES **[EN010154/APP/6.3]**.

Legislation

8.2.3 The following legislation is relevant to the Proposed Development and biodiversity:

a. Habitats Directive – Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Ref 8-2);

b. Birds Directive - Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Ref 8-3);

c. Regulation (EU) 1143/2014 of the European Parliament and of the Council on the prevention and management of the introduction and spread of invasive alien species (Ref 8-4);

d. Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ref 8-5);

e. Wildlife and Countryside Act 1981 (as amended) (Ref 8-1);

f. Environment Act 2021 (Ref 8-6);

g. Countryside and Rights of Way (CRoW) Act 2000 (Ref 8-7);

h. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Ref 8-8);

i. Natural Environment and Rural Communities (NERC) Act 2006 (Ref 8-9);

j. Protection of Badgers Act 1992 (Ref 8-10);

k. The Hedgerows Regulations 1997 (Ref 8-11);

l. Wild Mammals (Protection) Act 1996 (Ref 8-12);

m. Salmon and Freshwater Fisheries Act 1975 (Ref 8-13);

n. The Eels (England and Wales) Regulations 2009 (Ref 8-14);

o. The Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 8-15); and

p. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 8-16).

8.2.4 As part of the assessment, it is necessary to determine whether the Proposed Development is likely to have a significant effect on European sites, which include Special Protection Areas (SPA), Special Areas of Conservation (SAC), potential SPAs (pSPA) and possible SACs (pSAC). Additionally, Ramsar sites and proposed Ramsar sites, which are designated under international convention are also included. Therefore, Likely Significant Effects (LSEs) have been considered further, with relation to European sites, and are presented in a **Habitat Regulations Assessment (HRA) Report** of this ES **[EN010154/APP/7.13]**. The HRA concludes that the Proposed Development will not result in LSEs either alone or in-combination with other projects, due to the distance of designated sites and absence of impact pathways.

National Planning Policy

8.2.5 National Policy Statements (NPS) for energy, including relevant sections in relation to solar and the assessment of impacts on, and protection of biodiversity, set out national policy for energy infrastructure and provide guidance and the legal framework for planning decisions. They comprise the United Kingdom (UK) Government's objectives for the development of nationally significant infrastructure and take account of government policy relating to the mitigation of, and adaptation to, climate change. Therefore, the following NPSs have been reviewed and are relevant to the Proposed Development and biodiversity:

a. Overarching National Policy Statement for Energy (NPS EN-1), with particular reference to Sections 4.3, 4.6 and 5.4 (Ref 8-17);

b. NPS for Renewable Energy Infrastructure (NPS EN-3) (Ref 8-18), with particular reference to Section 2.10; and

c. NPS for Electricity Networks Infrastructure (NPS EN-5), with particular reference to Section 2.5 (Ref 8-19).

8.2.6 The National Planning Policy Framework (NPPF) (Ref 8-20) sets out the UK Government's planning policies for England and how these are expected to be applied. While the NPPF does not contain specific policies for Nationally Significant Infrastructure Projects (NSIPs) like those in the above NPSs, it remains a relevant matter for consideration as to the Government's general policy in respect of planning. The NPPF, with particular reference to Section 15 (conserving and enhancing the natural environment), states that the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity.

8.2.7 The NPPF (Ref 8-20) is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and

that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

8.2.8 The NPPF (Ref 8-20) also specifies the obligations that the Local Authorities and the UK Government have regarding sites statutorily designated for their biodiversity value and otherwise protected or notable habitats and protected species under UK and international legislation and how this is to be delivered in the planning system.

8.2.9 Priority habitats and protected or notable species are of material consideration in planning decisions and may therefore make some sites unsuitable for particular types of development, or if development is permitted and significant harm to biodiversity cannot be avoided, then adequate mitigation measures (or as a last resort, compensation) will be required to avoid or minimise impacts on certain habitats and species.

Local Planning Policy

8.2.10 Local planning policies that are relevant to inform the assessment on biodiversity are:

a. Central Lincolnshire Local Plan (Adopted April 2023) (Ref 8-21), Section 11: Natural Environment and specifically:
   i. Policy S60: Protecting Biodiversity and Geodiversity;
   ii. Policy S61: Biodiversity Opportunity and Delivering Measurable Net Gains; and
   iii. Policy S66: Trees, Woodland and Hedgerows.
b. Thorpe on the Hill Neighbourhood Plan 2016–2036 (Ref 8-22), specifically:
   i. Policy 3: Biodiversity; and
   ii. Policy 4: Green Spaces and Green Infrastructure.

Guidance

8.2.11 Guidance documents that have informed the assessment of the potential impacts of the Proposed Development on biodiversity include:

a. Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Costal and Marine (Ref 8-23);
b. Environmental Improvement Plan 2023 (Ref 8-24);
c. Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services (Ref 8-25);
d. Biodiversity Guidance for Solar Developments (Ref 8-26);
e. Natural England (NE) and Department for Environment, Food and Rural Affairs (DEFRA) Standing Advice (protected species) (Ref 8-27);
f. The UK Biodiversity Action Plan (BAP) list of priority habitats and species (Ref 8-28), succeeded by the UK Biodiversity Framework (Ref 8-29);

g. The International Union for Conservation of Nature (IUCN) Red List of Threatened Species (Ref 8-30);

h. Mitigating biodiversity impacts associated with solar and wind energy development: Guidelines for project developers (Ref 8-31);

i. NE's evidence review of the impacts of solar farms on birds, bats and general ecology (Ref 8-32);

j. NE's Technical Information Note TIN101 Solar parks: Maximising Environmental Benefits (Ref 8-33);

k. Greater Lincolnshire Biodiversity Opportunity Mapping (Ref 8-34);

l. Central Lincolnshire Green Infrastructure Strategy (Ref 8-35);

m. Lincolnshire Biodiversity Action Plan (LBAP) (3rd edition) (Ref 8-36), succeeded by the Greater Lincolnshire Local Nature Recovery Strategy (Ref 8-37);

n. Delivering Biodiversity Net Gain in Central Lincolnshire Guidance for Applicants Seeking Planning Permission April 2023 (Ref 8-38);

o. Witham and Humber Drainage Board Nature Strategy (Ref 8-39);

p. The Guidelines for the Selection of Biological Sites of Special Scientific Interest (SSSI) (Ref 8-40)

q. Local Wildlife Site Guidelines for Greater Lincolnshire (Ref 8-41); and

r. State of Nature 2023 report (Ref 8-42).

8.2.12 Technical guidance that has been used to define the survey methods for habitats and species is included in **Table 8-4** and within the methods section of the relevant technical appendices (**Appendices 8-B** to **8-K** of this ES **[EN010154/APP/6.3]**). Where technical guidance is specific to a species or group of species (e.g. birds), then these are also included within the relevant technical appendices (**Appendices 8-B** to **8-K** of this ES **[EN010154/APP/6.3]**).

8.3 Consultation

8.3.1 Consultation has taken place through a request for an EIA Scoping Opinion, formal pre-application engagement through the Preliminary Environmental Information (PEI) Report issued in October 2024 and technical engagement with statutory stakeholders (Lincolnshire County Council, North Kesteven District Council, and Lincolnshire Wildlife Trust) from January 2025.

8.3.2 A request for an EIA Scoping Opinion was sought from the Secretary of State, through the Planning Inspectorate, as part of the EIA Scoping Process. The EIA Scoping Report (**Appendix 1-A** of this ES **[EN010154/APP/6.3]**) was submitted to the Planning Inspectorate in June 2023 and recorded the findings of the scoping exercise, detailing the technical guidance, standards, best practice and criteria to be applied in the assessment that is presented within this Chapter. The Scoping Opinion (**Appendix 1-B** of this ES **[EN010154/APP/6.3]**) was received from the Planning Inspectorate in July 2023.

8.3.3 A high-level summary of the relevant stakeholders' responses, in relation to biodiversity, is presented in **Table 8-1**.

Table 8-1: Relevant Scoping Opinion Responses

Consultee	Summary of Comment	Summary of Applicant Response
Planning Inspectorate	The Scoping Report identifies that there are no Sites of Special Scientific Interest (SSSI) designated within the 2 km [kilometre] study area, and no internationally designated sites within 10 km (or sites designated for mobile species such as bats within 30 km) of the Proposed Development. However, the water environment Chapter of the Scoping Report identifies potential hydrological linkages between the Proposed Development and Swanholme Lakes SSSI, 4.2 km northeast of The Proposed Development. The Inspectorate does not agree therefore that effects on nationally designated ecological sites can be scoped out of the assessment at this stage until evidence that no pathway exists between The Proposed Development and Swanholme Lakes SSSI. Appropriate cross reference should therefore be made in the ES between the ecology and biodiversity and water environment assessments in the ES.	**Section 8.6** of this Chapter identifies the baseline conditions for the Proposed Development and confirms that there are no SSSIs within 2km of the DCO Site and no internationally designated sites within 10km (or sites designated for mobile species such as bats within 30 km). On the basis of Ordnance Survey mapping and further assessment, as presented in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**, there is no hydrological connectivity between the Proposed Development and Swanholme Lakes SSSI. The determination of potential impacts and effects on Important Ecological Features (IEFs), as presented in **Table 8-14** of this Chapter, concludes there are no impact pathways to the SSSI.

Consultee	Summary of Comment	Summary of Applicant Response
Planning Inspectorate	The Scoping Report states that there is some evidence that some species of aquatic invertebrates can be attracted to solar panels. The Scoping Report proposes to scope out the effects on aquatic invertebrates attracted to solar panels on the basis that there are no statutory sites designated for aquatic invertebrates within 1 km of the Proposed Development. The Inspectorate notes however that Whisby Nature Park Local Nature Reserve lies within 500m of the Solar and Energy Storage Park and is designated due to its complex of flooded gravel pits. The River Witham Aubourn to Beckingham Local Wildlife Site is also situated within the boundary of the Solar and Energy Storage Park [Principal Site]. Both therefore could have potential to contain populations of aquatic invertebrates. In the absence of evidence of agreement with consultation bodies, and as aquatic invertebrate surveys have not yet been completed to inform the baseline, the Inspectorate considers that this matter cannot be scoped out of the assessment at this stage.	Aquatic macroinvertebrate desk study and field surveys have been completed, the results of which are presented in **Appendix 8-C: Aquatic Ecology** of this ES **[EN010154/APP/6.3]**, with an assessment of the potential effects of the solar arrays on aquatic invertebrates included in **Table 8-15** of this Chapter, including any that may be associated with the River Witham Aubourn to Beckingham Local Wildlife Site and Whisby Nature Park Local Nature Reserve.
Planning Inspectorate	The Scoping Report states that the Proposed Development is not situated on a migratory flyway or flightpath used by congregations of birds and there is no evidence in the UK that solar panels increase the risk of mortality or displacement of bird populations. Risk of collision with solar panels is therefore proposed to be scoped out of the assessment. In the absence of evidence of agreement with consultation bodies and as bird surveys are yet to be completed, the Inspectorate considers that displacement and collision effects on birds cannot be scoped out of the assessment at this stage.	Surveys for breeding and non-breeding birds have been undertaken across the DCO Site, the full results of which are included in **Appendix 8-G: Breeding Birds** and **Appendix 8-H: Non-breeding Birds** of this ES **[EN010154/APP/6.3]**. This Chapter assesses the impacts on breeding and non-breeding birds including displacement, with appropriate bird mitigation land provided. The risk of collision between birds and solar panels was not raised as a concern by Natural England during statutory consultation (see **Table 8-2**) and there is little conclusive evidence on the impacts of glint and glare from operational solar farms on birds. It is accepted industry practice that solar panel installation does not

Consultee	Summary of Comment	Summary of Applicant Response
		require a collision risk assessment. The maximum height of the solar PV panels will be up to 3.5m above ground level (at maximum tilt). In the context of existing vegetation in the landscape, e.g. hedgerows, trees and woodland, the solar PV panels will not cause a physical impediment to bird movements across the landscape. Equally, birds transiting across the landscape are doing so on a broad front, i.e., there are no topographical or geographical features in the landscape to 'funnel' or concentrate bird movements, therefore, the exposure time to any possible reflected polarised light (glint or glare) is extremely low and is not considered as part of the assessment presented in this Chapter.
Planning Inspectorate	The Scoping Report Description of the Proposed Development indicates that some elements of the Proposed Development will have operational lighting from dusk, including the primary substation. The ES should therefore consider the potential for effects from light disturbance on sensitive ecological receptors during operation.	As described in **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, no areas of the Proposed Development are proposed to be continuously lit and any lighting used during operation will be task-specific (e.g. motion detection lighting at the Onsite Substation in case maintenance staff need access in hours of darkness) and will avoid unnecessary light-spill onto adjacent habitats, such as woodland. Security lighting would be fitted with Passive Infra-red Detector (PID) systems sensors. The potential impacts of lighting on sensitive ecological features are considered throughout this Chapter, where relevant.
Planning Inspectorate	The Inspectorate notes the presence of Stocking Wood, which appears to directly adjoin Tunman Wood Local Wildlife Site and is within the boundary	The Proposed Development design has removed Stocking Wood from the DCO Site and there will be no direct impacts to this woodland. The potential for

Consultee	Summary of Comment	Summary of Applicant Response
	of the Proposed Development. The ES should consider this site within the baseline and assess the potential for significant effects on this site.	significant indirect effects to affect Stocking Wood is considered in **Table 8-15** in this Chapter.
Planning Inspectorate	The ES should consider the potential for bat and bird collision and displacement effects with the proposed new overhead lines during operation, where this option remains under consideration within the ES.	Following the receipt of the EIA Scoping Opinion, the design has evolved to remove the potential overhead lines and replaced with the buried 400kV cable corridor, as presented in **Chapter 4: Alternatives and Design Evolution** of this ES **[EN010154/APP/6.1]**.
Planning Inspectorate	The ES should also consider the potential for the proposed overhead lines to create a barrier to the movement of mobile species such as birds and bats during operation, where this option remains under consideration within the ES.	Following the receipt of the EIA Scoping Opinion, the design has evolved to remove the potential overhead lines, as presented in **Chapter 4: Alternatives and Design Evolution** of this ES **[EN010154/APP/6.1]**.
Planning Inspectorate	The Scoping Report notes that the design would avoid impacts on veteran / ancient trees. The ES should therefore be supported by appropriate baseline data, including field survey, to identify the presence and condition of existing veteran and ancient trees, including hedgerow trees. Effects on ancient and veteran trees should be addressed in the ES, where significant effects are likely to occur	An Arboricultural Impact Assessment (comprising surveys of trees) has been prepared to accompany the DCO Application. This is included within **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3]**.
Wellingore Parish Council	The biodiversity net gain (BNG) of the project is not adequately dealt with, nor is the construction of the site such as to enhance the landscape for deer, hare and other species of animal and bird as may otherwise proliferate. Fenced areas create corridors trapping deer, hare and hunting owls at the mercy of road traffic. There will be significant change to flora and fauna under this massive extent of panelling. This change in habitat, food supply and breeding cycles should be scoped in.	A **Biodiversity Net Gain Report [EN010154/APP/7.12]** has been undertaken using Defra's Statutory Biodiversity Metric to identify opportunities for contributing to BNG. These opportunities are identified throughout this Chapter, in line with the requirements of the Environment Act (Ref 8-6), the NPPF (Ref 8-20) and local planning policy, including the Central Lincolnshire Local Plan (Ref 8-21). Fencing will be permeable for most animals and offset from roads to ensure that fauna is not put at risk from road traffic as well as not putting road users at risk. The

Consultee	Summary of Comment	Summary of Applicant Response
		fence design will include gaps to allow mammals to pass underneath at strategic locations to maintain ecological connectivity. Details of the proposed perimeter fencing are provided within **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]** and included in the **Framework LEMP [EN010154/APP/7.15].**
Aubourn with Haddington Parish Council Lincolnshire	There is no mention of the Witham Valley Countryside Park. The park area contains Sites of Special Scientific Interest, Nature Reserves and Local Wildlife Sites, which contain species of flora and fauna that are rare to Lincolnshire. The area is rich in biodiversity and provides habitats that support a diverse plant, bird and insect population, perfect for birdwatching activities. Aubourn with Haddington Parish Council Lincolnshire would like to see a full assessment of bird population, types, migratory routes and habitats for the Whisby nature reserve and the Witham Valley Country Park as a whole. This statement is made as the proposed Solar Farm sits right in the middle of the Witham Valley Country Park.	The Witham Valley Country Park does include Swanholme Lakes SSSI as one of its locations. This SSSI is approximately 4.0km north east of the DCO Site (see **Table 8-8**) and a full assessment of the potential impacts of the Proposed Development on this SSSI is presented in **Table 8-14**. Any other designated sites contained within the Witham Valley Country Park, where within the relevant Study Areas of the Proposed Development (see paragraph 8.5.4 of this Chapter), have been identified in **Table 8-8** and **Table 8-9** and assessed in **Table 8-14**. The habitat creation, biodiversity enhancement and landscaping, designed into the Proposed Development will result in an increase in the diversity of plants, birds and insects as well as other fauna, a significant improvement as compared to intensive arable agriculture. The design of the Proposed Development will link the habitat creation and increase in biodiversity into the green infrastructure in the wider landscape including the Witham Valley Country Park and the Local Nature Recovery Network. Surveys for breeding and non-breeding birds have been undertaken across the DCO Site, the full results of which are included in **Appendix 8-G: Breeding**

Consultee	Summary of Comment	Summary of Applicant Response
		Birds and **Appendix 8-H: Non-breeding Birds** of this ES **[EN010154/APP/6.3]**. There is potential for an overall benefit to the Witham Valley Country Park due to the improvement in the water quality and hydrology of the River Witham, which is downstream of the Proposed Development, due to the cessation of pesticide and fertiliser applications (used for arable farming) and likewise for irrigation.
Coleby Parish Council	Ecology: the balance of biodiversity is bound to change in a manner that is likely to impact flora and fauna indigenous to the present landscape. The extent of the development and requirements for proliferate security fencing will potentially restrict/funnel the movement of larger fauna such as hares, foxes, badgers and deer. Avian species that rely on open fields are likely to suffer notable loss of habitat and foraging areas.	The integration of soft landscaping within the design of the Proposed Development includes measures to increase biodiversity of native mammals, birds and insects (and other invertebrates). These enhancements will be linked together within the DCO Site as well as to green and blue infrastructure in the wider landscape and the Local Nature Recovery Network, a significant improvement as compared to intensive arable agriculture. This will include ensuring that fencing will be permeable for most animals and offset from roads to ensure that fauna is not put at risk from road traffic as well as not putting road users at risk. Details of the proposed perimeter fencing are provided within **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]** and included in the **Framework LEMP [EN010154/APP/7.15].** For ground nesting avian species that use open fields for foraging and nesting, bird mitigation areas comprising permanent grassland and managed arable land in undeveloped areas is provided (see **Figure 8-5: Bird Mitigation Land Allocation** of this ES

Consultee	Summary of Comment	Summary of Applicant Response
		[EN010154/APP/6.2]) to ensure that there is at least no net loss of resources or reduction in population size.
Environment Agency	Paragraph 3.2.47 We welcome the commitment to achieving BNG via creation of native grassland wildflower mixes, hedgerows and woodland, however we would like to also see more tree planting, wetland creation, river restoration and a commitment to regular (e.g. every 5 years) ecological auditing to provide data to the Local Ecological Records Centre.	The **Biodiversity Net Gain Report [EN010154/APP/7.12]** and **Framework LEMP [EN010154/APP/7.15]** specify the proposed landscaping including tree planting, pond restoration, and regular monitoring to achieve overall targets for BNG. As secured in the **Framework LEMP [EN010154/APP/7.15],** a post-construction monitoring programme will be formalised, agreed and included within the detailed LEMP. Walkover surveys of the DCO Site will be undertaken between April and June in years 2, 4, 6, 10 and then every 5 years post-construction until year 60. This monitoring will also be used for the purposes of BNG Condition Assessments that requires a 30-year management plan.
Environment Agency	Paragraphs 3.2.50 and 3.2.52 The management of vegetation should include the management of ecologically valuable habitats to maintain and/or enhance their ecological value.	The Applicant is committed to the management of retained and created ecologically valuable habitats within the DCO Site, details of which are included in the **Framework LEMP [EN010154/APP/7.15]**.
Environment Agency	Paragraph 3.2.54 We have concerns regarding the intention to remove any protected species (subject to appropriate surveys and licences) if they are considered to act as a hinderance to future agricultural use. It appears that the developer has approached the landowners and suggested that the land will be free to be used post-decommissioning however they (or their descendants) wish for agricultural use. Protected species legislation is very limited and can only have chance of protecting something when one knows it is present. This means that significant areas of enhanced habitat, such as wildflower strips could be destroyed by ploughing/fertilising, etc. If this is the case, the 10% biodiversity net gain intention will be a temporary uplift (albeit	The design of the Proposed Development seeks to avoid disturbance of any protected species and relocation of any protected species would be used only as a last resort (subject to appropriate surveys and licences). The issues raised by the Environment Agency regarding safeguarding protected species and the gains achieved in the biodiversity of the site through BNG will be addressed in the **Framework DEMP [EN010154/APP/7.9]** and would be dependent on species presence and legislation / policy at the time

Consultee	Summary of Comment	Summary of Applicant Response
	very long-term 40 years) and it would be a major biodiversity impact if significant areas of valuable habitat were lost after decommissioning. Perhaps the only way of protecting enhanced/created habitat indefinitely would be if they, in time, qualified as statutory designated sites. For that to happen Natural England would require ecological records of the habitats/species found hence our suggestion above (regarding paragraph 3.2.47) for a commitment to regular ecological auditing. I think this may be something we need to raise with LPA not the applicant because the applicant at this stage is effectively providing the 10% BNG voluntarily they may be more reluctant if they think there could be future restrictions placed on the land via designations. As such, we advise further discussions with Natural England in this regard.	of decommissioning (expected to be 60 years after operation commences).
Environment Agency	Paragraph 3.2.61 We welcome the use of multifunctional spaces to deliver multiple benefits to biodiversity, carbon savings, water and flood management, and green spaces.	The Applicant notes the Environment Agency comment welcoming the use of multifunctional spaces to deliver environmental gain. Multi-functional spaces provided as part of the proposals include an orchard, new permanent grassland, hedge and tree planting, details of which are included in the **Framework LEMP [EN010154/APP/7.15]**.
Environment Agency	We support the applicant's intention to provide a minimum of 10% biodiversity net gain (BNG) as part of the proposals. New developments should not only protect watercourses and their riparian corridors but also provide overall net gain for biodiversity. Net gain for biodiversity is defined as delivering more or better habitats for biodiversity and demonstrating this through use of the latest DEFRA Biodiversity Metric. It encourages development that delivers biodiversity improvements through habitat creation or enhancement after avoiding or mitigating harm. This approach is supported by section 4.5 of Overarching National Policy Statement (NPS) for Energy (EN-1), and paragraphs 174 and 179 of the National Planning Policy Framework (NPPF).	The Applicant notes the Environment Agency's support for the commitment to provide a minimum of 10% biodiversity net gain (BNG) as part of the proposals and confirms that the Proposed Development will: a. protect watercourses and their riparian corridors; b. provide overall net gain for biodiversity, defined as delivering more or better habitats for biodiversity demonstrating this through use of the latest Defra Statutory Biodiversity Metric; and

Consultee	Summary of Comment	Summary of Applicant Response
		c. deliver biodiversity improvements through habitat creation or enhancement after avoiding or mitigating harm. The Applicant notes that this approach is supported in both local and national policy,
Environment Agency	For any BNG [Biodiversity Net Gain] proposals which affect Main Rivers, the applicant should consult us at the earliest opportunity.	The Applicant confirms that the Environment Agency has been consulted regarding BNG proposals which affect Main Rivers and the assessment and enhancements leading to at least a 10% net gain in the biodiversity of "rivers".
Environment Agency	The development includes several locally designated floristically diverse calcareous grass verges, mostly identified in Lincolnshire Wildlife Trust's Life on the Verge project. The development should seek to support the management of these sites to facilitate their existing value, encourage their expansions and consider using them as donor sites for seeding new meadow bank creation within the site for biodiversity net gain.	The Applicant acknowledges that the Proposed Development includes several locally designated calcareous grass verges (see **Table 8-9** of this Chapter) and will continue to consult with Lincolnshire Wildlife Trust to safeguard and support the management of these sites, including the potential for expansion of these grassland habitats. The Applicant is committed to the management of retained and created ecologically valuable habitats within the DCO Site and will explore the use of donor sites for seeding of new grassland area. Details are included in the **Framework LEMP [EN010154/APP/7.15]**.
Forestry Commission	One of the most important features of ancient woodlands is the quality and inherent biodiversity of the soil; being relatively undisturbed physically or chemically it is also a major seed bank. Direct impacts of development that could result in the loss or deterioration of ancient woodland or ancient and veteran trees include: · damaging or destroying all or part of them (including their soils, ground flora or fungi)	The Applicant notes the Forestry Commission's advice regarding Ancient Woodland. No Ancient Woodland is within the DCO Site (as agreed by the Forestry Commission, see comment below) and an assessment of the potential impacts on broadleaved woodland or Ancient Woodland adjacent to the DCO Site is included in **Table 8-15** of this Chapter, noting the Forestry Commission's advice. Veteran and ancient

Consultee	Summary of Comment	Summary of Applicant Response
	· damaging roots and understorey (all the vegetation under the taller trees) · damaging or compacting soil around the tree roots · polluting the ground around them · changing the water table or drainage of woodland or individual trees · damaging archaeological features or heritage assets It is essential that the ancient woodland is considered appropriately to avoid the above impacts.	trees were recorded within the DCO Site and will be retained and protected (see **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3]** with suitable buffers as presented in the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**. As presented in **Table 8-15** of this Chapter, there will be no direct or indirect impacts to woodland habitats or veteran/ancient trees.
Forestry Commission	We are satisfied there are no Ancient Woodlands within the proposed site, however Tunman/Housham Ancient Replanted Woodlands are adjacent to the site, on its boundary.	The Applicant acknowledges the Forest Commission's agreement that there are no Ancient Woodlands within the DCO Site. Tunman / Housham woodland is immediately adjacent to the DCO Site, as identified paragraph 8.6.9 of this Chapter.
Natural England (NE)	There are no known hydrological connections between watercourses flowing through the study area to Swanholme lakes, however, we note that this will be confirmed at the next assessment stage.	On the basis of Ordnance Survey mapping and further assessment, as presented in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**, there is no hydrological connectivity between the Proposed Development and Swanholme Lakes SSSI.
NE	We agree that a Habitats Regulations screening assessment, which rules out the risk of the proposed development from having a significant effect, should be carried out and recorded in the ES.	The Applicant confirms that a Habitats Regulations screening assessment has been undertaken **[EN010154/APP/7.13]** and confirms that there are no likely significant effects on European sites.
NE	We note the reference to the Whisby Park Local National Nature (Paragraph 10.4.44) identified 339m north. 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 identified.	Whisby Park Local Nature Reserve will be not be directly impacted by the Proposed Development and embedded mitigation measures (included in **Table 8-13** of this Chapter), such as pollution control and dust suppression (as detailed in the **Framework**

Consultee	Summary of Comment	Summary of Applicant Response
		Construction Environmental Management Plan (CEMP) [EN010154/APP/7.7], will ensure that no indirect impacts occur, although there are no hydrological or ecological connections between the LNR and the DCO Site. The integration of soft landscaping within the design of the Proposed Development includes measures to increase connectivity across the DCO Site and in the wider ecological network, noting the opportunities to form ecological connections to Whisby LNR.
NE	We welcome the information that has already been gathered, and a desk study identified records of protected or notable species of flora and fauna within the 2 km study area, including Great Crested Newt and agree with the proposed site surveys listed at Table 9-3.	The Applicant notes Natural England's comment and the ecological baseline for protected or notable species is included in **Table 8-11** of this Chapter.
NE	The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). NE does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. 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. Potential impact pathways where further info/assessment required should be identified	This Chapter assesses the impact of all phases of the Proposed Development on protected species, with the baseline identified in **Table 8-11**. Data on protected and notable plant and animal species has been obtained from the Greater Lincolnshire Nature Partnership (GLNP) within a 2km Study Area of the DCO Site to provide context for the wider area. Field surveys have been undertaken for protected and notable habitats and species, as required. Combined, these have informed the assessment and an assessment of the potential impacts on protected species in **Table 8-15** and requirements for mitigation set out in **Table 8-13** of this Chapter.
NE	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	Field surveys have been undertaken for protected and notable habitats and species in appropriate seasons and informed by published guidance (see **Table 8-4**),

Consultee	Summary of Comment	Summary of Applicant Response
	accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants	as required and by suitably competent and qualified ecologists, e.g. meeting the guidelines of the Chartered Institute of Ecology and Environmental Management (CIEEM). The results of these surveys have informed the assessment and an assessment of the potential impacts on protected species in **Table 8-15** and requirements for mitigation set out in **Table 8-13** of this Chapter.
NE	The applicant should check to see if a mitigation licence is required using NE guidance on licencing NE wildlife licences. Applicants can also make use of NE's charged service Pre-Submission Screening Service for a review of a draft wildlife licence application. NE then reviews a full draft licence application to issue a Letter of No Impediment (LONI) which explains that based on the information reviewed to date, that it sees no impediment to a licence being granted in the future should the DCO be issued.	This Chapter assesses the impact of all phases of the Proposed Development on protected species, with baseline ecological information presented in **Table 8-11**. With embedded mitigation and avoidance, as presented in **Table 8-13**, there is no requirement for protected species licences as protected species, such as Badger, will be avoided. However, where this may change (e.g. during pre-commencement checks) and if such features cannot be avoided, then NE will be consulted at the earliest opportunity.
NE	Section 9.3.15 shows that a Biodiversity Net Gain (BNG) assessment will be undertaken (using DEFRA Metric 4.0 or the most up to date metric at the time of the assessment) to identify opportunities for contributing to BNG. These opportunities will be identified and set out within the ES, in line with the requirements of the Environment Act, the NPPF and local planning policy, including the Central Lincolnshire Local Plan. We welcome the commitment to contribute to delivering a minimum 10% net gain in biodiversity at Paragraph 3.2.41.	A **Biodiversity Net Gain Report [EN010154/APP/7.12]** has been undertaken using Defra's Statutory Biodiversity Metric to identify opportunities for contributing to BNG. These opportunities are identified throughout this Chapter, in line with the requirements of the Environment Act (Ref 8-6), the NPPF (Ref 8-20) and local planning policy, including the Central Lincolnshire Local Plan (Ref 8-21).
NE	We note that the Environment Act requires habitats to be secured for at least 30 years. We recommend that a Framework Biodiversity and Landscape Management Plan be produced and prior to the start of construction	We note that the Environment Act requires habitats to be secured for at least 30 years. The **Framework LEMP [EN010154/APP/7.15]** will set out the principles

Consultee	Summary of Comment	Summary of Applicant Response
	following grant of the DCO, which will set out the principles for how the land will be managed throughout the operational phase, following the completion of construction. Due to the initial 40-year lifespan of the development, this management plan is likely to fulfil the 30-year management requirement of BNG habitats.	for how the land will be managed throughout the operational phase post construction. A post-construction monitoring programme will be formalised, agreed and included within the detailed LEMP. Walkover surveys of the DCO Site will be undertaken between April and June in years 2, 4, 6, 10 and then every 5 years post-construction until year 60.
NE	We recommend that all habitat creation on site should be designed to complement the surrounding area, enhancing existing features, improving connectivity across the development area and contributing to the Nature Recovery Network. Please note to the south east is Boothby Lodge Farm, which covers 617 ha of Grade 3 agricultural land and is one of the Environmental Land Management Proposed Developments (ELMs) Landscape Recovery pilots. The project will rewild the site by restoring natural processes and a mosaic of dynamic habitats.	The **Biodiversity Net Gain Report [EN010154/APP/7.12]** and **Framework LEMP [EN010154/APP/7.15]** specify the proposed landscaping and monitoring to achieve overall targets for BNG and the Applicant can confirm that the design, landscaping and associated land management will: a. maximise beneficial impacts wherever possible, e.g. creation and management of natural habitat buffers, conservation grazing; b. link into the green and blue infrastructure in the wider landscape, contributing to the Local Nature Recovery Network; and c. complement the rewilding of Boothby Lodge Farm.
NE	Priority Habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. Lists of priority habitats and species can be found here. NE does not routinely hold species data. Such data should be collected when impacts on priority habitats or species are considered likely. We note from our mapping resource that Ancient Woodland Priority Habitat (dealt with below) and Deciduous	Comment noted. This approach has been applied to the assessment included throughout this Chapter and includes the details stated, including a comprehensive desk study and field survey data that informed species-specific assessments to identify priority habitats and presence of any protected and notable species.

Consultee	Summary of Comment	Summary of Applicant Response
	Woodland (PH) occur within the search area. Your desk study identified that within the site boundary, priority habitats under Section 41 of the NERC Act 2006 are present or likely to be present (section 9.4.6) include: ancient and/or species rich hedgerows, rivers, standing water/ponds, arable field margins, lowland mixed deciduous woodland, coastal and floodplain grazing marsh, lowland calcareous grassland, lowland meadows, traditional orchards and wood pasture and parkland. These habitats have potential to support a large range of protected and notable species and we note that survey 7 is required to confirm the presence of further priority habitats. The Environmental Statement 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.	
NE	We note that the eastern and central part of the study area is typically sparsely wooded, other than a network of small woodland blocks. The western side of the central and southern parts of the study area is typically more wooded, occupied by Hawdin's Wood and Norton Big Wood, both located south west of Witham St Hughs. Both woodlands, totalling approximately 57 ha, are identified as Ancient Woodland (AW). The ES should assess the impacts of the proposal on the ancient woodland and any ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts. It should also consider opportunities for enhancement. Ancient	The Applicant notes NE's advice regarding Ancient Woodland. No Ancient Woodland is within the DCO Site (as agreed by the Forestry Commission in their Scoping response), with the nearest such woodland type being Tunman / Housham Woods which is immediately adjacent to the DCO Site (see paragraph 8.6.9 of this Chapter). Veteran and ancient trees are present in the DCO Site as discussed in **Appendix 10-H: Arboricultural Impact Assessment** of this ES

Consultee	Summary of Comment	Summary of Applicant Response
	woodland is an irreplaceable habitat of great importance for its wildlife, its history, and the contribution it makes to our diverse landscapes. Paragraph 180 of the NPPF sets out the highest level of protection for irreplaceable habitats and development should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy exists. Natural England maintains the Ancient Woodland Inventory which can help identify ancient woodland. The wood pasture and parkland inventory sets out information on wood pasture and parkland. The ancient tree inventory provides information on the location of ancient and veteran trees. Natural England and the Forestry Commission have prepared standing advice on ancient woodland, ancient and veteran trees.	**[EN010154/APP/6.3]**. An assessment of the potential impacts on Ancient Woodland adjacent to the DCO Site and veteran/ancient trees within and adjacent to the DCO Site are included in **Table 8-15** of this Chapter and confirms there will be no direct or indirect impacts to these habitats.
North Kesteven District Council	Paragraph 3.2.40 and Table 3.1 contain proposed separation distances to ecological habitats etc however there is nothing to confirm how these were derived. Also, depending on the point at which the DCO is applied for, and during consideration of the application, either s104 or s105 of the Act will be engaged. Even if still in draft, the March 2023 consultation versions of EN-1 and EN-3 will be a material consideration.	Published guidance and best practice have been used to determine undeveloped areas around ecological features, as presented in **Table 8-13**. These have informed the indicative design presented in **Figure 3-2A: Indicative Fixed South Facing Layout Plan** and **3-2B: Indicative Single Axis Tracker Layout Plan [EN010154/APP/6.2]** and described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**. The Applicant is committed to positive vegetation management within the Proposed Development, details of which are included in the **Framework LEMP [EN010154/APP/7.15]**. Within this ES, the Applicant has considered NPS EN-1 (Ref 8-17) and EN-3 (Ref 8-18) in compliance with S104 of the Planning Act 2008 (Ref 8-43).
North Kesteven District Council	Paragraph 9.3.2 refers to the status of the secondary legislation associated with the Environment Act and as such comments that the Proposed Development will only 'seek to' include a minimum target of 10% BNG compared against the predevelopment biodiversity value. The Council	The Applicant notes North Kesteven District Council's emphasis on the requirements of Central Lincolnshire Local Plan (CLLP) Policy S61 and confirms a

Consultee	Summary of Comment	Summary of Applicant Response
	would highlight the requirements of CLLP Policy S61 'Biodiversity Opportunity and Delivering Measurable Net Gains' which requires that all qualifying development proposals must deliver at least a 10% measurable biodiversity net gain attributable to the development.	commitment to delivering a minimum 10% net gain using Defra's Statutory Biodiversity Metric.
North Kesteven District Council	The net gain for biodiversity should be calculated using NE's Biodiversity Metric'. NSIP schemes, by virtue of their scale and the nature of development, are very well placed to be able to deliver at least 10% BNG, and therefore we are disappointed that the applicant's commitment is only to 'seek to' deliver 10% BNG which is therefore at odds with Local Plan policy.	The Applicant can confirm that the Proposed Development will deliver biodiversity net gains in line with those set out in the **Biodiversity Net Gain Report [EN010154/APP/7.12]** and secured through Requirement 8 of Schedule 2 of the draft DCO **[EN010154/APP/3.1].**
North Kesteven District Council	With reference to 9.3.12, relevant local guidance comprises the Central Lincolnshire Biodiversity Opportunity and GI Mapping, Central Lincolnshire Green Infrastructure Strategy and Local Nature Recovery Strategy (or any subsequent replacements) which should all be referred to in the formulation of ecological enhancement/gain.	The Applicant notes relevant local guidance comprising the Central Lincolnshire Biodiversity Opportunity and GI Mapping, Central Lincolnshire Green Infrastructure Strategy and Local Nature Recovery Strategy (or any subsequent replacements) and confirms that these have all been reviewed and referred to in the assessment presented in this Chapter (see paragraph 8.2.11 of this Chapter and **Appendix 8-A: Ecology Legislation, Planning Policy Context and Guidance** of this ES **[EN010154/APP/6.3]**.
North Kesteven District Council	Paragraph 9.5.7 and Table 3-1 refer to undeveloped buffers being included to protect hedgerows, veteran/ancient trees, ponds and ancient woodland during construction and operation. However, as there are no indicative/draft layout plans it is unclear how these have been derived and whether they are appropriate.	Published guidance and best practice have been used to determine undeveloped areas around ecological features. These have informed the indicative design presented in **Figure 3-2A: Indicative Fixed South Facing Layout Plan** and **3-2B: Indicative Single Axis Tracker Layout Plan [EN010154/APP/6.2]** and described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**.

Consultee	Summary of Comment	Summary of Applicant Response
North Kesteven District Council	Finally, whilst paragraph 11.1.4 confirms that the LVIA will be undertaken with reference to other environmental topics and reports, 'including the Arboricultural and Glint and Glare Assessment' there is no other reference to the Arboricultural Assessment elsewhere in the Scoping Report. For the avoidance of doubt the DCO application should be accompanied by a full tree survey and constraints plan undertaken to BS:5837 'Trees in relation to design, demolition and construction – Recommendations' standards. Reference should also be made to the Council's adopted Tree Strategy (2020) www.nkesteven.gov.uk/sites/default/files/2023-02/tree strategy.pdf	An Arboricultural Impact Assessment has been prepared to accompany the DCO Application. This is included within **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3].**
Norton Disney Parish Clerk	3. Its possible devastating effect on wildlife, property values and rural infrastructure.	The cessation of agricultural inputs will provide benefits to the soil and the watercourses into which the land drains, as presented in **Section 8.9** of this Chapter. This in turn has the potential to increase permanent habitat of greater floristic diversity than intensively managed arable farmland and increases in species. Habitat compensation and enhancement is set out in the **Framework LEMP [EN010154/APP/7.15]**, secured as part of the DCO Requirements, to ensure mitigation and enhancement measures are delivered successfully. An assessment of the impacts of the Proposed Development on soils is provided within **Chapter 12: Socio-Economics and Land Use** of this ES **[EN010154/APP/6.1]**
Thorpe on the Hill Parish Council	Thorpe on the Hill Parish Council request that the A46 woodland belt and other woodland as listed should be identified and included in the ES. It is further requested that trees and hedges along highway verges and field hedgerows should also be identified and included in the ES.	The baseline habitats presented in this Chapter (and associated appendices and figures) include all habitats relevant to the assessment (as detailed in the assessment methodology in **Section 8.5**). This includes the A46 woodland belt, trees, hedges, highways verges and field hedgerows as relevant.

Consultee	Summary of Comment	Summary of Applicant Response
Thorpe on the Hill Parish Council	Thorpe on the Hill Parish Council request that the impact on birds, particularly water birds, is not scoped out of the ES.	Surveys for breeding and non-breeding birds have been undertaken across the DCO Site, the full results of which are included in **Appendix 8-G: Breeding Birds** and **Appendix 8-H: Non-breeding Birds** of this ES **[EN010154/APP/6.3]**. An assessment of the potential impacts of the Proposed Development on birds is included in this Chapter.
Thorpe on the Hill Parish Council	Thorpe on the Hill Parish Council request that Stocking Wood be listed as a non-statutory site and, as such, the site boundary be redrawn to exclude Stocking Wood.	The Proposed Development design has removed Stocking Wood from the DCO Site and there will be no direct impacts to this woodland. The potential for significant indirect effects to affect Stocking Wood is considered in **Table 8-15** in this Chapter.
Thorpe on the Hill Parish Council	The ES should justify the reasons for the selection of any buffer distances provided within the design from sensitive landscape and ecological features. Consideration should be given to maintaining buffers during construction as well as operation in order to protect sensitive receptors. The mechanisms for maintaining these buffers should also be contained within the outline management plans provided within the ES and secured through the Development Consent Order (DCO). Stated buffer distances from watercourses should also be taken from the top of the watercourse bank.	Published guidance and best practice have been used to determine undeveloped areas around ecological features. These have informed the indicative design presented in **Figure 3-2A: Indicative Fixed South Facing Layout Plan** and **3-2B: Indicative Single Axis Tracker Layout Plan [EN010154/APP/6.2]** and described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**. The Applicant is committed to vegetation management within the Proposed Development, details of which are included in the **Framework LEMP [EN010154/APP/7.15]**.
Thorpe on the Hill Parish Council	Thorpe on the Hill Parish Council notes that no reference to Witham Valley Country Park is made in the scoping document. We request that the importance of the park is acknowledged in the ES. We further request that	The Witham Valley Country Park includes designated sites and any designated sites contained within the Witham Valley Country Park, where within the relevant Study Areas of the Proposed Development (see paragraph 8.5.4 of this Chapter), have been identified

Consultee	Summary of Comment	Summary of Applicant Response
	a full assessment of the environmental and socio-economic impact of placing a large solar farm in the centre of the park is included in the ES.	in **Table 8-8** and **Table 8-9** and assessed in **Table 8-14**. The habitat creation, biodiversity enhancement and landscaping, designed into the Proposed Development will result in an increase in the diversity of plants, birds and insects as well as other fauna, a significant improvement as compared to intensive arable agriculture. The design of the Proposed Development will link the habitat creation and increase in biodiversity into the green infrastructure in the wider landscape including the Witham Valley Country Park and the Local Nature Recovery Network. There will be an overall benefit to the Witham Valley Country Park due to the improvement in the water quality and hydrology of the River Witham which is downstream of the Proposed Development due to the cessation of pesticide and fertiliser applications (used for arable farming) and likewise for irrigation.

8.3.4 Further consultation in response to formal pre-application engagement was undertaken through the Preliminary Environmental Information (PEI) Report, issued in October 2024. **Table 8-2** outlines the statutory consultation responses relating to biodiversity and how these have been addressed through this Chapter of the ES. The **Potential Main Issues for Examination [EN010154/APP/7.11]**, **Consultation Report [EN010154/APP/5.1]** and **Consultation Report Appendices [EN010154/APP/5.2]** provide further detailed responses, as relevant, to the feedback received during statutory consultation.

Table 8-2: Main matters raised through statutory consultation

Consultee	Summary of comments raised	Summary of Applicant Response
Lincolnshire County Council (LCC)	LCC is of the opinion that survey work undertaken to date employs appropriate methods and appears to have been undertaken to a good standard. LCC notes that ecological surveys are ongoing and will continue into 2025. LCC will be happy to provide additional comments when the results of this additional work are available.	Comments noted. Details of ecological surveys undertaken and the methods used to characterise the baseline are set out in **Table 8-4** of this Chapter. Embedded avoidance and mitigation for relevant protected species are included in **Table 8-13** of this Chapter. Full results of all ecological surveys are set out in **Appendices 8-B** to **8-K** of this ES **[EN010154/APP/6.3]**.
LCC	The Applicant has undertaken a data search against records held in the Lincolnshire Environmental Records Centre hosted by the Greater Lincolnshire Nature Partnership (GLNP). This has ensured that sites protected or important at international, national and local levels have been correctly identified. LCC notes the content of the Framework CEMP and welcomes approaches to the establishment and management of ecological mitigation measures set out therein. LCC notes that final details of construction methods and site design have not yet been fully determined and hence impacts on ecology such as extent of the losses of certain habitats, both temporary and permanent cannot yet be fully identified. The Applicant should ensure that the impacts of the final design and construction methodology are fully assessed in the ES. LCC welcomes the Applicant's commitment to the development mitigation and enhancement measures to various species and species groups but advises that the applicant should ensure clarity around which measures are mitigation and which are genuine enhancement. Little information is currently presented about the potential design and layout of ecological mitigation and enhancement	This Chapter addresses the impacts of the Proposed Development on habitats and species as well as embedded avoidance and mitigation measures, which are included in **Table 8-13** of this Chapter, with an assessment of the impacts of the Proposed Development on habitats, presented in **Table 8-15**. Relevant protective measures during construction are set out in the **Framework CEMP** [**EN010154/APP/7.7**]. Full details of habitat creation, management and monitoring for the lifetime of the Proposed Development are set out in the **Framework LEMP [EN010154/APP/7.15]**. The locations of proposed ecological mitigation and enhancement measures are illustrated on the Framework Landscape Masterplan in Annex A of the **Framework LEMP [EN010154/APP/7.15]**. Consultation with LCC is ongoing and LCC will be consulted on the detailed design and associated documents listed above.

Consultee	Summary of comments raised	Summary of Applicant Response
	including opportunities for delivering BNG, but LCC notes the Applicant's intention to develop this area as the environmental assessment work progresses. LCC would welcome the opportunity to provide further input to the detailed design of new habitats to be established on site at the appropriate stage.	
LCC	LCC welcomes the Applicant's commitment to deliver at least 10% Biodiversity Net Gain (BNG) as a result of the development stated at Chapter 8 (8.13.6) of the PEI Report. Whilst this is not currently mandatory for NSIPs it is considered good practice. LCC would encourage the Applicant to maximise opportunities for the delivery of BNG and to seek to deliver significantly in excess of 10% given the scale and nature of the proposed development. LCC advises that the delivery of BNG should be quantified by employing Defra's Statutory Biodiversity Metric.	The Applicant can confirm that the net gain for biodiversity has been calculated using Defra's Statutory Biodiversity Metric and the Proposed Development as presented in the **Biodiversity Net Gain Report [EN010154/APP/7.12]** and secured through Requirement 8 of Schedule 2 of the draft DCO**.** The Applicant has committed to deliver a minimum of 30% biodiversity net gain in habitat units, 50% biodiversity net gain in hedgerow units and 10% biodiversity net gain in watercourse units using DEFRA's Statutory Biodiversity Metric (SBM) (Version 1.0.4) for the Proposed Development.
LCC	LCC advises that Biodiversity Opportunity Mapping has been produced by the GLNP and a Local Nature Recovery Strategy (LNRS) for Greater Lincolnshire is currently being developed. These documents will provide useful guidance when considering opportunities to deliver BNG and the establishment of new habitats.	Comment noted and whilst the LNRS has not yet been published, the Biodiversity Opportunity Mapping (Ref 8-34) has been reviewed as part of the assessment presented in this Chapter. The LNRS will be reviewed and considered once published.
LCC	Botanical interest: LCC notes that data from botanical surveys is not included in the PEIR. The applicant should ensure that they have undertaken sufficiently detailed and appropriately timed botanical survey work to be confident that the presence of any scarce arable plant species occurring on the site are detected and to inform the calculation of the baseline biodiversity values.	Detailed hedgerow surveys and surveys for important arable flora including condition assessments for BNG (where applicable), were undertaken within the appropriate survey seasons in 2024, details of which are presented in **Appendix 8-B: Terrestrial Habitats and Notable Flora** of this ES **[EN010154/APP/6.3]**.

Consultee	Summary of comments raised	Summary of Applicant Response
LCC	Ancient woodland: LCC advises that ancient woodland data for the County is currently being updated by the GLNP. The Applicant may already have access to this data but should ensure that the most up to date information including from field surveys is being used to assess impacts.	Information on the locations of Ancient Woodland within the Zone of Influence (ZoI) is taken from NE's Ancient Woodland Inventory (Ref 8-49) and included in paragraph 8.6.9 of this Chapter. The most up to date information has been used.
LCC	Bats: LCC notes that additional surveys are planned to determine the level of bat activity and the presence of any roosts within the proposed boundary. Recent studies have shown a decrease in levels of bat activity associated with the presence of solar developments though reasons for this are not yet clearly understood. The applicant should ensure that bat surveys are appropriately timed and detailed to ensure that impacts on bats can be properly assessed in the ES.	Additional transect and static surveys were carried out within the appropriate seasons in 2024, to ensure better coverage of representative habitats across the DCO Site (in response to changes in the DCO Site and access to land). Full details and results of the bat surveys are presented in **Appendix 8-I: Bats** of this ES **[EN010154/APP/6.3]**, with embedded avoidance and mitigation presented in **Table 8-13** of this Chapter and an assessment of the potential impacts on bats, as a result of the Proposed Development, presented in **Section 8.11**.
LCC	Breeding birds: LCC advises that the applicant should ensure that adequate information is available to ensure that the impacts on breeding birds and in particular, ground nesting species such as Skylark [Alauda arvensis] can be properly assessed in the ES. LCC notes that surveys have detected a population of a species listed on Schedule 1 of the Wildlife and Countryside Act which is almost of national significance using parts of the proposed Cable Corridor and its immediate vicinity. The Applicant should ensure that appropriate mitigation measures are in place to avoid negative impacts (including disturbance) on this species. LCC would highlight that Lincolnshire Wildlife Trust is working to develop some best practice guidance for solar developments in Lincolnshire which seeks to identify strategic	Results of surveys to characterise the baseline for breeding birds, including ground nesting species, are presented in **Appendix 8-G: Breeding Birds** of this ES **[EN010154/APP/6.3]**, with embedded avoidance and mitigation presented in **Table 8-13** of this Chapter and an assessment of the potential impacts on breeding birds, as a result of the Proposed Development, presented in **Section 8.11**. Further information on the best practice guidance for solar developments in Lincolnshire is welcomed.

Consultee	Summary of comments raised	Summary of Applicant Response
	opportunities for ecological mitigation and enhancement linked to solar development including for ground nesting bird species.	
LCC	Terrestrial invertebrates: LCC notes the content of Appendix 8D: Terrestrial Invertebrates surveys and advises that where appropriate the design of ecological mitigation and enhancement measures should cater for the needs of less common species detected e.g. by retaining elm wherever possible and including local provenance elm in new planting to benefit White-letter hairstreak.	There is currently some existing Elm *Ulmus* species present within hedgerows, some of which is dead. Disease resistant Elm is proposed to be planted within the Principal Site, details of which are included in the **Framework LEMP [EN010154/APP/7.15]**.
LCC	Invasive non-native species (INNS): LCC notes that INNS have been identified within the study area and welcomes the commitment to the production of Biosecurity Management Plan in the Framework CEMP. This should set out details of appropriate controls and working methods aimed at preventing the spread of INNS.	Biosecurity management is included in the **Framework CEMP [EN010154/APP/7.7]**.
LCC	HRA Pre-Screening: LCC notes the conclusion of the HRA pre-screening process and has no reason to disagree with this.	Comment noted and the **Habitat Regulations Assessment (HRA) Report [EN010154/APP/7.13]** is included with this ES.
LCC	Cumulative effects: There are several development proposals of varying scales in the vicinity of this proposal including other solar developments. A detailed assessment of the cumulative impacts of these proposals on sensitive ecological receptors in the area should be undertaken in the ES This should include habitat change, as well as the magnitude of change, that will result from conversion of arable farmland to a solar farm, alongside other solar NSIP projects in the area.	An assessment of Cumulative Effects of the Proposed Development in combination with those of other nearby solar projects is provided in **Section 8.15** of this Chapter and in **Chapter 15: Cumulative Effects and Interactions** of this ES **[EN010154/APP/6.1]**.

Consultee	Summary of comments raised	Summary of Applicant Response
LCC	LCC's Infrastructure Ecologist will be happy to work with the Applicant, their consultants and other stakeholders throughout the EIA process to ensure that ecological elements of the application are properly addressed, and that scheme secures the maximum potential benefits for biodiversity.	Comment noted.
North Kesteven District Council	We strongly recommend that the evolving scheme design has regard to the Biodiversity Opportunity Mapping Areas in Local Plan which cover large areas of the site particularly on land to the north of the A46. Further information can be found at paragraphs 11.2.8 – 11.2.11, policy S61 and Appendix 4 of the CLLP together with the evidence base document. This matter was raised in our scoping response and in subsequent meetings with you and we note that it is referenced at paragraph 8.2.11 but it is not clear how the opportunities for wider environmental net gain have been incorporated into the scheme design.	The Biodiversity Opportunity Mapping (Ref 8-34) and Central Lincolnshire Local Plan (Ref 8-21) has been reviewed as part of the assessment presented in this Chapter and considered as part of the development of the Landscape Masterplan (as presented in **Annex A** of the **Framework LEMP [EN010154/APP/7.15].** The integration of soft landscaping within the design of the Proposed Development includes measures to increase connectivity across the DCO Site and in the wider ecological network.
North Kesteven District Council	Whilst we accept that assessment work will continue beyond PEIR stage ahead of the submission of a DCO application, we are disappointed that there are no tangible commitments at this stage beyond meeting minimum BNG requirements. By way of comparison, the Heckington Fen solar NSIP project has committed to delivering a minimum of 65% BNG (PINS document reference REP5-056, paragraph 5.5.18). Consistent with all current DCO solar projects, we expect the Fosse Green project to significantly exceed 10% BNG and will continue to push for this to be evidenced.	A **Biodiversity Net Gain Report [EN010154/APP/7.12]** (secured through Requirement 8 of Schedule 2 of the draft DCO) has been undertaken in line with the requirements of the Environment Act (Ref 8-6), the NPPF (Ref 8-20) and local planning policy, including the Central Lincolnshire Local Plan (Ref 8-21). Prescriptions for the establishment, long term management and monitoring of habitat creation measures that would deliver BNG are also included within the **Framework LEMP [EN010154/APP/7.15]**.
	In respect of trees, we note that Table 8.10 in the Ecology Chapter states there will be a 15m buffer from woodland but that this figure is 20m in the Landscape and Visual Assessment Chapter and it is 25m at paragraph 5.4.2 in the Ecological Appraisal. We would recommend that buffer	An Arboricultural Impact Assessment has been prepared to accompany the DCO Application. This is included within **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3]** and includes details of the Root Protection Areas for all trees and hedgerows. The layout includes a 15m

Consultee	Summary of comments raised	Summary of Applicant Response
	distances for all trees, large/veteran trees, woodland and hedgerows are checked for consistency across the ES Chapters and appendices. We would not expect, however, that a blanket approach is taken across all trees given that there may be large or veteran trees within hedgerows and where root protection areas and associated constraints plans should be assessed and developed on a case-by-case basis.	undeveloped offset from woodland, across the entirety of the DCO Site.
North Kesteven District Council	As there is no tree survey or arboricultural impact assessment available at present, it is not possible to fully consider any proposed layouts of fencing, solar arrays, built development and works or to consider any potential impact or mitigation. We note that this will be provided to inform the finalised ES. We note that TPOs are not shown in the correct locations on Figure 10.3. Further consultation with the Council's Tree Officer and LCC's Ecologist would be welcomed on these matters, along with the Council's Ecologist with regard BNG, following the PEIR consultation and prior to the final ES being prepared.	An Arboricultural Impact Assessment has been prepared to accompany the DCO Application. This is included within **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3]** and includes statutory designation information relating to trees such as Tree Preservation Orders and Conservation Areas. Consultation has been undertaken in February 2025 with Lincolnshire County Council's ecologist following the PEI Report consultation and prior to preparation of this ES Chapter.
Natural England	Internationally Designated Sites: Natural England (NE) note the inclusion with the PEIR Appendix 8-K, the HRA Pre-Screening. This is welcomed following our advice at the EIA Scoping stage. Appendix 8-K para 2.1.3 correctly acknowledges that it is ultimately the responsibility of the Secretary of State, as the	The locations of statutorily designated sites are identified in **Section 8.6** of this Chapter and there are no impact pathways to such sites, as presented in **Table 8-14**. The **Habitat Regulations Assessment (HRA) Report [EN010154/APP/7.13]** is included with this ES and confirms these details.

Consultee	Summary of comments raised	Summary of Applicant Response
	competent authority, to undertake the HRA screening exercise. NE welcome the provision of this Pre-Screening Appendix to ensure all relevant information is available to inform this, in one place. The report has correctly identified the closest designations, Birklands & Bilhaugh (SAC) 23km West, and The Wash (SAC, SPA & Ramsar) 40km South East. Appendix 8-K para 3.1.2 states there are no functional ecological connections to Birklands & Bilhaugh SAC. NE concur with this assessment and consider there to be no possible impact pathways from the proposed development to the SAC. Appendix 8-K para 3.1.3 correctly identifies a hydrological connection between the development site and The Wash. It is assessed that at this distance there are no potential impacts arising and the Proposed Development. NE concurs with this assessment. Although there is a potential pathway for impacts, the development poses minimal risk of water pollution, and at 70km upstream of the Wash, any pollutants derived from the development are likely to be undetectable at the Wash (i.e. due to settlement, dilution etc) Nonetheless, NE would expect best practise measures to be implemented throughout construction & operation to avoid pollution of the wider environment. It is acknowledged that the scheme has been designed to further avoid pollution of watercourses on site – i.e. via buffering the scheme from the River Witham. PEIR para 8.6.4 states that there will be no likely significant effects (LSEs) on European sites arising from the proposed development. Natural England concurs with this conclusion.	Embedded avoidance and mitigation measures, are presented in **Table 8-13**, and the relevant protective measures during construction are set out in the **Framework CEMP [EN010154/APP/7.7]**

Consultee	Summary of comments raised	Summary of Applicant Response
Natural England	Nationally Designated Sites: The proposed development is not located within, or within the setting of, any nationally designated landscapes. As such, NE have no specific comments to make on the further landscape implications of this proposal. We welcome the reference made to Natural England's National Character Areas and advise that the development should avoid impact to and, where possible, enhance local distinctiveness.	The Proposed Development is not located within the setting of any nationally designated landscape.
Natural England	Protected Species: Natural England generally welcome the approach taken to avoid impacts to protected species and note that, at present, no need has been identified by the applicant for any Protected Species licences from Natural England. It is acknowledged that further survey is planned for a number of species, either as a result of the mobility of the species, or changes in the detailed development design potentially impacting upon the species. Where any further pre-consent surveys reveal the need for a licence from Natural England, we recommend using our Pre-Submission Screening Service, whereby we can assess a draft licence application and provide a LoNI (Letter of No Impediment), where we consider there to be no reason that a licence would not be granted post DCO consent. Where post-consent surveys reveal the need for a licence from Natural England, this will need to be applied for in the usual manner; Natural England are unable to provide a position on the likelihood of a licence being granted without having reviewed a draft licence application (which is usually not possible where pre-consent surveys indicate a lack of licence need).	This Chapter assesses the impact of all phases of the Proposed Development on protected species, with baseline ecological information presented in **Table 8-11**. With embedded mitigation and avoidance, as presented in **Table 8-13**, there is no requirement for protected species licences as protected species, such as Badger, will be avoided. However, where this may change (e.g. during pre-commencement checks) and if such features cannot be avoided, the comments regarding licences are noted and NE will be consulted at the earliest opportunity.

Consultee	Summary of comments raised	Summary of Applicant Response
	It should also be noted that Natural England are unable to comment on the need for a licence, this responsibility falls to the developer. Our protected species standing advice should be consulted here.	
Natural England	BNG: Whilst Biodiversity Net Gain is not yet mandatory for NSIPs, NE welcome the commitment made in PEIR para 8.13.8 to deliver a minimum of 10% BNG across area, linear and river habitat units, using the Statutory Biodiversity Metric Tool. To enable the Planning Inspectorate, and Secretary of State, to consider the beneficial effect of the project on biodiversity, NE recommend this commitment should be secured within the DCO. Where demonstrated to be feasible through the BNG Assessment, NE would support commitment to greater gains than the minimum 10%. The approach to securing the establishment, long term management and monitoring of habitat creation measures within the LEMP is welcomed.	The BNG assessment is submitted as part of the DCO application. The assessment includes the anticipated percentage of biodiversity net gain that will be included as part of the Proposed Development alongside indicative habitat management and delivery mechanisms. A minimum of 10% BNG will be delivered across the three habitat metrics, and this commitment is secured under Requirement 8 in Schedule 2 to the Draft DCO **[EN010154/APP/3.1]**. Full details of the BNG assessment are provided in the **Biodiversity Net Gain Report [EN010154/APP/7.12]** and habitat creation, management and monitoring details are set out in the **Framework LEMP [EN010154/APP/7.15],** secured as part of the DCO Requirements, to ensure mitigation and enhancement measures are delivered successfully.
Natural England	Ancient Woodland and Ancient / Veteran Trees: NE refer to our Standing Advice for Ancient Woodland, Ancient Trees and Veteran trees. The presence of parcels of woodland, including ancient woodland, in proximity to the north of the development site is noted. Opportunities should be explored to protect, buffer and connect these habitats through the scheme.	Details of Ancient Woodland within the ZoI of the Proposed Development are included in paragraph 8.6.9 of this Chapter, with the nearest Ancient Woodland being adjacent to the Principal Site. Woodland will be retained and appropriately buffered (see **Table 8-13** of this Chapter) and the proposed landscaping, which will improve connectivity across the DCO Site are illustrated on the Framework Landscape Masterplan in Annex A of the **Framework LEMP [EN010154/APP/7.15]**.
Lincolnshire Wildlife Trust (LWT)	The key area of interest for LWT and this scheme is Tunman Wood which lies adjacent to the northwest of the development order. The site hosts important populations of Nightjar	No new paths are proposed next to Tunman Wood and existing paths within or adjacent to grassland bird mitigation areas will be screened or separated to reduce disturbance to ground nesting birds. Habitat

Consultee	Summary of comments raised	Summary of Applicant Response
	[*Caprimulgus europaeus*] and Woodcock [*Scolopax rusticola*] which are highly sensitive species to human disturbance. The site boundaries around Tunman Wood should see a creation of an ecotone where two habitats converge which supports greater biodiversity than either single habitat would. A gradation of scrub that increases in height towards Tunman Wood, and Housham Wood to the south, would significantly enhance these woodland sites as the hard and unnatural boundaries between habitats are softened. This would have the added benefit of an increase in biodiversity units that can be produced by the scheme. We acknowledge this principle is outlined in paragraph 8.13.11 Natural Regeneration Areas and encourage this be carried out along the borders of Tunman and Housham Woods. 1 BRE (2014) Biodiversity Guidance for Solar Developments. Eds G E Parker and L Greene 2 Natural England TIN101 (2011) Solar parks: maximising environmental benefits	creation, management and monitoring of the Proposed Development, are set out in the **Framework LEMP [EN010154/APP/7.15]**. Undeveloped areas (offsets) of 15m from woodland, between Tunman Wood and the Principal Site will allow for natural regeneration of the woodland edge. Details of this are set out in the **Framework LEMP [EN010154/APP/7.15]**. An Arboricultural Impact Assessment has been prepared to accompany the DCO Application. This is included within **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3]**.
LWT	We are encouraged to see the hedgerow and scrub enhancement measures as these will likely lead to significant improvement in the biodiversity value of the project area and enhance habitat connectivity to the wider landscape. The aim of creating species rich grassland beneath the PV panels may be somewhat ambitious based on information we have gathered from previous solar projects in Greater Lincolnshire and conversations with experienced ecologists. A more practicable solution considering ongoing habitat management would be to create modified grassland of either moderate or good condition beneath the arrays due to increased shade in these areas. Once the forthcoming BNG assessment has been completed we would expect the scheme to fall broadly in line with other solar developments proposed for Lincolnshire	Agreed, based on other solar schemes the target of modified grassland is more likely to be achieved between and under the panels. Opportunities in other open areas for targeting more species rich grassland. The Applicant will consider any plans for biodiversity units and the question of whether they would be sold or not following receipt of any consent. Full details of the BNG assessment are provided in the **Biodiversity Net Gain Report [EN010154/APP/7.12].**

Consultee	Summary of comments raised	Summary of Applicant Response
	(approx. 1.5-2BU per hectare). These biodiversity units should not be sold onto other development project and should remain with this scheme contributing to the 'additionality' pillar of the BNG framework and the Environment Act 2021.	
LWT	Given Lincolnshire is predominantly a farming focused county we are concerned about the cumulative impact on ground-nesting birds and want to see a considerable effort to minimise these impacts and provide substantial compensation for any and all losses in breeding territories. Lincolnshire Wildlife Trust in principle understands that an individual solar farm may not have a negative impact on ground-nesting birds at a population level. But we have taken the decision due to the sheer volume of solar farm developments being applied for across Greater Lincolnshire including NSIPs, that we will take a consistent approach, as we believe cumulatively, there is true potential to impact populations in Greater Lincolnshire. Until the industry address this as a collective body, we will continue to take this approach. The results from the breeding bird survey [Appendix 8-G] revealed 227 pairs of skylark, 22 pairs of lapwing and 15 pairs of grey partridge recorded as breeding onsite. This was assessed to be of county importance and outlined in paragraphs 8.12.11-18. We strongly encourage the scheme use the latest guidance for skylark mitigation and work with LWT to contribute to this scheme across Greater Lincolnshire.	Surveys for breeding and non-breeding birds have been undertaken across the DCO Site, the full results of which are included in **Appendix 8-G: Breeding Birds** and **Appendix 8-H: Non-breeding Birds** of this ES **[EN010154/APP/6.3]**. The Applicant has consulted, and will continue to consult, with LWT throughout the development of the proposed bird mitigation areas and proposed management of these areas, as presented in Annex A of the **Framework LEMP [EN010154/APP/7.15]**.

8.3.5 In addition to statutory consultation, technical engagement has been undertaken with statutory stakeholders for biodiversity. The matters discussed included updates on surveys and the assessment of impacts since the PEI Report and BNG report. A summary of these additional consultation events is presented in **Table 8-3**.

Table 8-3: Summary of Engagement with Statutory Nature Conservation Bodies

Stakeholder	Date / Method	Summary of Consultation	Summary of Applicant Response
Lincolnshire Wildlife Trust (LWT) and Lincolnshire County Council (LCC).	23rd January 2025 / Online Meeting	Progress to date and a run through of consultation comments from December 2024 were discussed. There were no issues on ecological surveys and a Masterplan is in development and will be issued for consultation. Applicant to provide the masterplan at next step of consultation and review of survey data not previously provided at PEIR.	Full results of all ecological surveys are set out in **Appendices 8-B** to **8-K** of this **ES [EN010154/APP/6.3]** and summarised in **Table 8-15** of this Chapter. The Applicant has consulted with LWT throughout the development of the proposed bird mitigation areas and proposed management of these areas, as presented in Annex A of the **Framework LEMP [EN010154/APP/7.15]**.
		A commitment to a specific BNG % and a need to see the BNG before DCO to agree a statement of common ground. No answer to the question on selling BNG credits yet.	Full details of the BNG assessment are provided in the **Biodiversity Net Gain Report [EN010154/APP/7.12]**. The Applicant has committed to deliver a minimum of 30% biodiversity net gain in habitat units, 50% biodiversity net gain in hedgerow units and 10% biodiversity net gain in watercourse units using DEFRA's Statutory Biodiversity Metric (SBM) (Version 1.0.4) for the Proposed Development.
		LWT solar guidance to be issued this year, likely to be spring/summer 2025. Applicant to review guidance when issued.	Comments noted, not yet issued (March 2025). Full details of habitat creation, management and monitoring for the lifetime of the Proposed Development, are set out in the **Framework LEMP [EN010154/APP/7.15]**.
		The next meeting between LWT and AECOM (with BNG / landscape team) to be organised for when the masterplan is finalised and the outline LEMP/CEMP documents are produced.	Comments noted.
Natural England	7th February 2025 /	Discussion of the PEIR consultation comments provided by Natural England on Internationally and Nationally Designated Sites.	Natural England concurs with the Applicant that the locations of statutorily designated sites have been

Stakeholder	Date / Method	Summary of Consultation	Summary of Applicant Response
	Online Meeting	Applicant and NE agreed at this meeting there will be no direct or indirect impacts to internationally of nationally designated sites.	correctly identified and that there are no impact pathways to such sites. The **Habitat Regulations Assessment (HRA) Report [EN010154/APP/7.13]** is included with this ES and confirms these details.
Natural England	7th February 2025 / Online Meeting	Discussion of the PEIR consultation comments provided by Natural England on Protected Species. "Natural England generally welcome the approach taken to avoid impacts to protected species and note that, at present, no need has been identified by the applicant for any Protected Species licences from Natural England. It is acknowledged that further survey is planned for a number of species, either as a result of the mobility of the species, or changes in the detailed development design potentially impacting upon the species." With the exception of a small number of ponds outside the DCO Site (proposed for great crested newt surveys in May 2025), surveys for all species / habitats have now finished and technical reports are provided in this ES. The need for protected species licences can be avoided through avoidance of impacts.	Full results of all ecological surveys are set out in **Appendices 8-B** to **8-K** of this **ES [EN010154/APP/6.3]** and summarised in **Table 8-15** of this Chapter. At this stage, no protected species licences are required owing to the embedded avoidance and mitigation measures proposed (see **Table 8-13** of this Chapter). However, should pre-commencement checks identify that the locations of protected species has changed and/or features cannot be avoided, then Natural England will be consulted at the earliest opportunity to discuss any licencing requirements.
Natural England	7th February 2025 / Online Meeting	Discussion of Biodiversity Net Gain PEIR comments: "Whilst Biodiversity Net Gain is not yet mandatory for NSIPs, Natural England welcome the commitment made in PEIR para 8.13.8 to deliver a minimum of 10% BNG across area, linear and river habitat units, using the Statutory Biodiversity Metric Tool. To enable the Planning Inspectorate, and Secretary of State, to consider the beneficial effect of the project on	Full details of the BNG assessment are provided in the **Biodiversity Net Gain Report [EN010154/APP/7.12]** and habitat creation, management and monitoring of the Proposed Development, are set out in the **Framework LEMP [EN010154/APP/7.15]**. Both documents ensure mitigation and enhancement measures are delivered successfully as part of the Proposed Development, secured as a Requirement of the DCO.

Stakeholder	Date / Method	Summary of Consultation	Summary of Applicant Response
		biodiversity, NE recommend this commitment should be secured within the DCO. Where demonstrated to be feasible through the BNG Assessment, NE would support commitment to greater gains than the minimum 10%." Noted and based on other solar sites (e.g. Longfield Essex, Tillbridge Lincs.) BNG will be higher that 10% and Statutory Biodiversity Metric to be used and prepared for the DCO submission. (Anticipated mandatory from November 2025). Natural England also stated: "The approach to securing the establishment, long term management and monitoring of habitat creation measures within the LEMP is welcomed."	
Natural England	7th February 2025 / Online Meeting	Ancient Woodland and Ancient/Veteran Trees: "Refer our Standing Advice for Ancient Woodland, Ancient Trees and Veteran trees. The presence of parcels of woodland, including ancient woodland, in proximity to the north of the development site is noted. Opportunities should be explored to protect, buffer and connect these habitats through the scheme." Buffer habitats between e.g. Tunman Wood and the solar infrastructure will be provided, incorporating natural regeneration of woodland edge.	Buffers of 15m from woodland, including between Tunman Wood and the Principal Site will allow for natural regeneration of the woodland edge. Details of this are set out in the **Framework LEMP [EN010154/APP/7.15]**. An Arboricultural Impact Assessment has been prepared to accompany the DCO Application. This is included within **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3]**.
Environment Agency (EA)	6th March 2025 / Online meeting	Discussion of the PEIR consultation – main points raised: Not all priority fish species have been listed in the assessment.	European Eel *Anguilla anguilla*, Bullhead *Cottus gobio* and Spined Loach *Cobitis taenia* were recorded through the desk study (see **Appendix 8-C: Aquatic Ecology** of this ES **[EN010154/APP/6.3]** and **Table 8-11** in this Chapter and are assessed, as appropriate, within this Chapter.

Stakeholder	Date / Method	Summary of Consultation	Summary of Applicant Response
EA	6th March 2025 / Online meeting	Overpumping and drain down mitigation not in place for fish.	Mitigation in consideration of the presence of fish is included in **Table 8-13** of this Chapter, secured in the **Framework CEMP** [**EN010154/APP/7.7**]. Fish rescues will be included where considered necessary under an FR2 permit from the EA, including a requirement to use compliant screening on any pump used for drain-down or over pumping of watercourses.
EA	6th March 2025 / Online meeting	INNS risk of spread – wheel wash facilities appear to be located near Main Rivers and Ordinary Watercourses.	The **Framework CEMP** [**EN010154/APP/7.7**] includes the management proposals for wheel wash water to avoid the spread of INNS.
EA	6th March 2025 / Online meeting	Enhancement creation of water dependent habitats	Full details of the BNG assessment are provided in the **Biodiversity Net Gain Report [EN010154/APP/7.12]** and Habitat creation, management and monitoring of the Proposed Development, are set out in the **Framework LEMP [EN010154/APP/7.15]** of this ES, secured though the DCO Requirements, to ensure mitigation and enhancement measures are delivered successfully.
EA	6th March 2025 / Online meeting	Assessment of Electromagnetic Fields (EMF) used insufficient evidence for effects on fish from buried cables under the rivers Witham and Brant.	It was agreed between the Applicant and the EA that a 5 m depth under the riverbed is suitable for cables on Main Rivers (such as the Rivers Witham and Brant). This has the added benefit of reducing EMF impacts on fish, as these levels are less than background EMF levels.
EA	6th March 2025 / Online meeting	HDD mitigation not including full period of key fish migration/spawning windows	**Table 8-13** of this ES include mitigation to avoid HDD activities within key spawning/migration windows of September to February (salmonids) and March to May (coarse fish) wherever practicable.

Stakeholder	Date / Method	Summary of Consultation	Summary of Applicant Response
			For any open cut crossings, additional habitat assessments were completed to identify any suitable spawning habitat. No spawning habitat was identified in the Aquatic Habitat Appraisal surveys in the baseline surveys as presented in **Appendix 8-C: Aquatic Ecology** of this ES **[EN010154/APP/6.3]**.

8.4 Assumptions, Limitations and Uncertainties

8.4.1 The assessment is made for the construction, operation (and maintenance), and decommissioning phases of the Proposed Development and is based upon the maximum parameters of design for the Proposed Development and the design information (see **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**). The construction period is anticipated to be 24 months or phased over 30 months and, subject to a development consent order being granted and any associated pre-commencement requirements being discharged, construction is anticipated to start in 2031 to enable completion for the currently agreed connection date in 2033.

8.4.2 This assessment considers the aspects predicted to represent the worst-case scenario within this construction period. This will differ depending on the construction activity and ecological feature involved. For example, a 30-month construction period will likely encompass three breeding seasons for birds, instead of two for a 24-month construction period. A longer duration may, therefore, create disturbance over a longer period for the general breeding bird assemblage, but not necessarily individuals. Conversely, a shorter, but more intense, construction period may result in greater levels of disturbance to individual breeding birds but reduce exposure to the wider assemblage. In general, the impact on flora is not affected by the duration of activity but rather the change or loss of any habitats.

8.4.3 Habitat and species information referenced in the assessment presented in this Chapter has been collected from existing sources of data and field surveys undertaken on land within and around the DCO Site between January 2023 and May 2025, where permission to access the land was obtained from landowners. Where access was not permitted within the relevant survey areas, then professional judgement on species presence / absence (based on habitat present, desk study data and field survey results from the wider area) was applied for the purposes of this Chapter and when defining the potential impacts of the Proposed Development on Important Ecological Features (IEFs).

8.4.4 The Study Areas used in this Chapter have captured all designated sites, sensitive habitats, and species of importance that occur within the relevant Zone of Influence (Zol) of the Proposed Development. The boundaries and zones for the Study Area reflect standard good practice and were informed by published guidance (Ref 8-23) and professional judgement. The Study Areas and Survey Areas defined are the maximum distances that statutory consultees would typically expect to be considered, and these Survey Areas were presented within the EIA Scoping Report (**Appendix 1-A** of this **ES [EN010154/APP/6.3]**), with no scoping responses received that disagreed with the areas stated.

8.4.5 The extent of the Survey Area varies according to the ecological feature in question and with regards to the precautionary principle i.e. if there is doubt as to whether or not an area should be surveyed, then it is included within the Survey Area.

8.4.6 Specific assumptions and limitations relevant to each survey, including how any limitations have been overcome, are included within the relevant technical appendices presented in **Appendices 8-B to 8-K** of this ES **[EN010154/APP/6.3]**. There are no constraints to the collection of data that represent a significant limitation or data gap and the baseline that has been established is suitably robust.

8.4.7 The assessment has noted the presence of Brown Hare *Lepus europaeus* and Hedgehog *Erinaceus europaeus* within the DCO Site, but no species-specific surveys for any mammals listed in accordance with Section 41 of the NERC Act (Ref 8-9) (e.g. Brown Hare, Hedgehog, Polecat *Mustela putorius* and Harvest Mouse *Micromys minutus*) have been undertaken as part of the assessment. Instead, where the DCO Site is within the known geographical range for these species, if there are desk study records of any such species occurring within 2km of the DCO Site and there is suitable habitat on site to support them, then they are assumed to be present. Consideration for any embedded mitigation required for relevant Species of Principal Importance (SPI) is described in **Section 8.10** of this Chapter. It is anticipated that the proposed landscape design for the Proposed Development will be largely beneficial for any such mammal species present.

8.4.8 Water bodies and ditches located within and close to the DCO Site may support common and widespread amphibian species (e.g. Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris*) and the DCO Site also offers suitable terrestrial habitats for these species in the form of hedgerows, scrub, semi-improved grassland and woodland. Surveys are not required for such species and have not been specifically undertaken for these species, but observations of these species have been recorded and will continue to be recorded during any ecological surveys post-consent. These species receive limited legislative protection, but embedded mitigation described in **Section 8.10** of this Chapter (e.g. for reptiles) will ensure that there is no injury or killing of such species (if present) during construction of the Proposed Development.

8.4.9 The **Biodiversity Net Gain Report** [**EN010154/APP/7.12**] has been prepared with reference to the **Figure 7.15-1: Landscape Mitigation Plan** within the **Framework LEMP** [**EN010154/APP/7.15**] and **Figure 3-17: Maximum Vegetation Removal Plan** [**EN010154/APP/6.2**]. BNG is an iterative process and therefore, the report presents an indicative assessment of the units that can be expected to be achieved within the parameters set out in **Chapter 3: The Proposed Development** of this ES [**EN010154/APP/6.1**].

8.5 Assessment Method

8.5.1 This section sets out the scope and assessment methods for the assessment of the potential impacts of the Proposed Development on biodiversity.

Characterising the Baseline

8.5.2 Within this Chapter, the following terminology is used when referring to the geographic areas within which assessments have been made:

a. Study Area – the area within which the Proposed Development will be located and an appropriate radius (as defined in paragraph 8.5.4) which was subject to collection of background information e.g., the location of non-statutorily designated sites within 2km of the DCO Site.

b. Zone of Influence (ZoI) – the area over which biodiversity features may be affected by changes as a result of the Proposed Development and associated activities (Ref 8-23). Through review of likely impacts of the Proposed Development and results of the desk study, the scope of field surveys was then defined. The ZoI was based on the following criteria, proportionate to the Proposed Development's potential to impact on each feature:

   i. the nature of the project (a solar farm, and associated infrastructure), associated project activities, and the potential for effects at all development stages (construction, operational (including maintenance) and decommissioning);

   ii. the nature of the current land use (predominantly arable) and habitats in the vicinity (majority being arable), their connectivity (e.g. through hedgerows, ditches or grassland margins), and how they may be used by different species;

   iii. the presence and assemblages of species which may be in the area, identified during the desk study and based on the location of the Proposed Development; and

   iv. the different habits, behaviours and preferences of different species that could be affected, and how these vary both spatially and seasonally.

c. Survey Area – the area within which field survey work was undertaken (see **Table 8-4**) which are specific to a given species, group of species or habitat.

Site and Study Area

8.5.3 The land within which the Proposed Development will be located (hereafter, the DCO Site) and referred to within this Chapter, includes the Principal Site (to include solar arrays, battery storage and associated infrastructure) and the Cable Corridor (as defined in **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**). The DCO Site are within the administrative county of Lincolnshire, however this Chapter (and appendices) of the ES recognises that key aspects of biodiversity are coordinated and managed within the geography of Greater Lincolnshire, for example the Nature Strategy for the Greater Lincolnshire Nature Partnership (GLNP).

8.5.4 For the Proposed Development the Study Area, for which data were searched and collated through a desk study, based on the typical maximum distances expected by statutory consultees and consistent with similar developments of

this extent (as presented in the Scoping Report (**Appendix 1-A** of this ES **[EN010154/APP/6.3]**)), is within the DCO Site and up to:

a. 10km for European sites, extended to 20km from the DCO Site where birds with extensive foraging ranges (e.g. Pink-footed Goose *Anser brachyrhynchus* or Golden Plover *Pluvialis apricaria*) are noted as a qualifying feature and 30km from the SAC where bats are noted as the, or one of, the qualifying features. In addition, a search beyond these distances was undertaken to determine whether the DCO Site is hydrologically connected to any European sites;

b. 5km for sites statutorily designated for their biodiversity value at a National level, e.g. SSSIs, National Nature Reserves (NNRs) and Local Nature Reserves (LNRs). In addition, for the purposes of air quality, consideration beyond this distance was given to any SSSI identified as being within 200m of the affected road network, if appropriate;

c. 2km for sites non-statutorily designated for their biodiversity value, e.g. Local Wildlife Sites (LWSs), Sites of Importance for Nature Conservation (SINC). In addition, for the purposes of air quality, consideration beyond this distance was given to any designated site identified as being within 200m of the Affected Road Network, if appropriate;

d. 2km for Ancient Woodland, veteran and ancient trees and Priority Habitats;

e. 2km for records (from the preceding ten years) of protected and notable species;

f. 2km for aquatic species records. However, where relevant records of notable aquatic species were available from connected water bodies, a wider search area was utilised to consider connectivity for migratory species (e.g., fish);

g. 2km for any applications for European Protected Species Licences (e.g., for bats or Great Crested Newt *Triturus cristatus)* and agri-environment schemes, e.g. Countryside Management Schemes; and

h. 2km for the status of water bodies subject to the Water Framework Directive (WFD) (Ref 8-16) which are assessed in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]** and informed by the assessment of aquatic ecology features presented here. As impacts may propagate downstream in hydrologically linked surface water bodies, the Study Area was extended beyond 2km where data was not available within 2km.

Sources of Information

8.5.5 The Study Areas used for the desk study are defined in paragraph 8.5.4 of this Chapter.

8.5.6 GLNP manages the Lincolnshire Environmental Records Centre (LERC) and was contacted in April 2023 to obtain pre-existing ecological information on

the location of non-statutorily designated sites and for records of protected and notable habitats, species and INNS from the preceding ten years.

8.5.7 Protected and notable habitats and species are those listed under:

a. Schedules 1, 5 and 8 of the WCA 1981 (as amended) (Ref 8-1);

b. Schedules 2, 4 and 5 of The Conservation of Habitats and Species Regulations 2017 (Ref 8-8); or

c. Section 41 (S41) of the NERC Act 2006 (Ref 8-9) which lists Species of Principal Importance (SPI) and Habitats of Principal Importance (HaPI) for nature conservation in England.

8.5.8 Other habitats and species, such as those included in national, regional or local Red Data Books and Lists but not protected by legislation (this is consistent with the requirements of relevant planning policy) were also considered and have been assessed on a case-by-case basis.

8.5.9 Records of INNS, as listed under Schedule 9 of the WCA 1981 (as amended) (Ref 8-1) and The Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 8-15) have also been taken into account when assessing potential constraints on the Proposed Development.

8.5.10 Online data resources that were reviewed include:

a. the Ramsar Sites Information Service (RSIS) website (Ref 8-44) for site information and designation details of any Ramsar's identified within the relevant Study Area (refer to paragraph 8.5.4);

b. the NE website (Ref 8-45) for information on sites statutorily designated for their biodiversity value and to confirm reasons for designation and their condition;

c. NE's Impact Risk Zones for SSSI (Ref 8-46) to determine if the Proposed Development may have an effect on any SSSI within the Study Area or trigger the impact risk zones;

d. the Joint Nature Conservation Committee (JNCC) website (Ref 8-47), for site information and designation details of SACs and SPAs (including pSPAs and pSACs) identified within the relevant Study Areas;

e. the Multi-Agency Geographic Information Centre (MAGIC) (Ref 8-48), to identify the location (and details) of sites statutorily designated for their biodiversity value, Priority Habitats; for any granted European Protected Species Licence applications or agri-environment schemes within the relevant Study Areas;

f. NE's Ancient Woodland (England) inventory (Ref 8-49) for the location of Ancient Woodland within 2km of the DCO Site;

g. Woodland Trust's ancient tree inventory (Ref 8-50), for details of ancient, veteran or notable trees within the Study Area;

h. National Biodiversity Network (NBN) Atlas (Ref 8-51) for open-source details on any protected and, or notable species recorded within 2km of the DCO Site;

i. Defra and Environment Agency (EA) Ecology and Fish Data Explorer for species records of fish, macroinvertebrate and macrophytes (Ref 8-52);

j. Defra and EA Catchment Data Explorer for data on WFD water bodies and water catchments (Ref 8-53); and

k. records published in relevant documents, such as county bird reports.

Collaborative Datasets

8.5.11 Field survey data from the proposed National Grid substation near Navenby (a separate Town and Country Planning Act (TCPA) Application by National Grid Energy Transmissions (NGET), east of Navenby, (where the Proposed Development would connect to the Grid) that overlaps with the DCO Site were obtained from NGET to demonstrate collaboration with this overlapping scheme and a reduction in environmental footprint. These datasets were predominantly collected in 2024 and comprised:

a. Habitat data;

b. Information on hedgerows (species-rich / poor and, or ecologically important);

c. Details of any presence of reptiles and amphibians;

d. Location and details of surveyed trees for bat roost potential;

e. Locations and details of bat activity, including static monitoring;

f. Location and details of any Badger activity (including any setts, where relevant); and

g. Location and details of any INNS or other SPI (e.g. SPI mammals, where relevant).

Field Surveys

8.5.12 The requirement for ecological field surveys was determined following a Preliminary Ecological Appraisal (PEA) which consisted of three components:

a. Desktop study data review, including a request for data from GLNP / LERC;

b. Survey of the DCO Site and up to 50m from the DCO Site (where these were accessible or visible from the DCO Site), to record the broad habitats (using Phase 1 habitat survey methods (Ref 8-54) and then later converting the baseline habitats into UKHab (Ref 8-55)). The 50m survey zone around the DCO Site is appropriate in evaluating adjacent habitats and informing on the potential presence, or otherwise, of protected species within the vicinity of the Proposed Development; and

c. Protected species scoping survey, to inform on the likelihood of the habitats on Site supporting protected species and other species of conservation concern.

8.5.13 The PEA is not included with this Chapter, but relevant information has been included throughout this Chapter. The PEA informed the need for field surveys

for relevant protected or notable habitats and species, as presented in **Table 8-1**. The PEA was undertaken in October 2024, with surveys to record the habitats undertaken between June and November 2023 and May to July 2024.

8.5.14 **Table 8-4** presents details of the coverage, methods and survey periods of ecological surveys undertaken within the relevant Survey Areas.

Table 8-4: Ecological surveys undertaken to characterise the baseline conditions

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
Terrestrial Habitats and Flora (including INNS) included in **Table 8-10** of this Chapter and **Appendix 8-B: Terrestrial Habitats and Notable Flora** of this ES **[EN010154/APP/6.3]**)	Surveys for important arable flora species involve walking arable field boundaries to record notable species as listed in Great Britain (Ref 8-56) and England (Ref 8-57). Terrestrial habitat surveys of roadside verges and grassland as part of the Phase 1 / UKHab survey, with species lists and abundance ratings to identify notable species and species composition to provide information to categorise the habitat and for the BNG condition assessment, and the presence and abundance of any Invasive Non-Native Species (INNS). Naming and status of higher plants given based on 'New Flora of the British Isles' (Ref 8-58).	Surveys undertaken in July and September 2024.	The DCO Site.	Using professional judgement, areas of terrestrial habitat surveyed in further detail were those within the DCO Site and with the potential to be impacted by the Proposed Development, informed by the desk study and as identified from the initial Phase 1 Habitat survey (that mapped habitats out to 50m from the DCO Site). The surveys identified any areas of notable habitats or habitats that are important for flora, to inform any required avoidance, mitigation or enhancement.
Hedgerows (**Appendix 8-B: Terrestrial Habitats and Notable Flora**) of this ES **[EN010154/APP/6.3]**)	Hedgerows were surveyed in accordance with the methodology as outlined in DEFRA's Hedgerow Survey Handbook (Ref 8-59), to assess their 'importance'	Survey undertaken in June 2023 and May, June, July and August 2024.	The DCO Site.	Using professional judgement, surveying all hedgerows within the DCO Site is appropriate, acknowledging that those hedgerows that are likely to

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
	against the Wildlife and Landscape Criteria, detailed in the Hedgerows Regulations (Ref 8-11), to determine whether a hedgerow is species-poor or species-rich and to provide information for the BNG condition assessment.			be impacted by the Proposed Development are within the DCO Site itself. Hedgerows outside the DCO Site will remain intact and unaffected by Proposed Development.
Aquatic habitat walkover (scoping) survey: fish, macroinvertebrate and macrophyte surveys, including aquatic and riparian INNS (**Appendix 8-C: Aquatic Ecology**) of this ES **[EN010154/APP/6.3]**)	Accessible and safe stretches of water body banks were walked, noting physical habitat features such as riparian cover, channel substrate, habitat type, modifications, and in-stream vegetation to assess the potential for water bodies to support protected or notable species and inform further survey work. The survey method for streams and ditches followed the aquatic macroinvertebrate sampling procedures (Ref 8-60, Ref 8-61).	Survey undertaken within optimal survey seasons for all aquatic features, as required, in May, June and August 2023.	Water bodies identified during the aquatic scoping survey and desk study for further survey within the DCO Site, based on likely impacts to Ordinary Watercourses and ditches. Main Rivers (River Witham and River Brant) were scoped out for further survey due to the commitment to cross these watercourses by non-intrusive techniques and data already available.	The land within the DCO Site is an appropriate Survey Area to determine any potential impacts arising from the Proposed Development both upstream and downstream (also informed by desk study, which assesses a wider 2km ZoI). Fish surveys were scoped out as sufficient information to inform the assessment was obtained from desk study data alone. Pond surveys were scoped out due to the commitment to maintain a minimum buffer zone of 10m from ponds and for these to remain unaffected.

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
Terrestrial Invertebrate scoping survey (**Appendix 8-D: Terrestrial Invertebrates**) of this ES **[EN010154/APP/6.3]**)	A walkover survey, undertaken by a specialist entomologist, to identify areas of likely greater importance to terrestrial invertebrates, followed by sample-surveying to appraise the broad level of terrestrial invertebrate interest within such areas.	Survey undertaken between March and April 2023.	The Survey Area is within the Principal Site.	Using professional judgement, surveying habitat within the Principal Site only is appropriate, acknowledging that habitats that have the potential to be permanently impacted (i.e. lost) by the Proposed Development and potentially supporting notable terrestrial invertebrates or assemblages are within this area. The surveys identified any areas likely to be important for terrestrial invertebrates and informed any required avoidance, mitigation or potential enhancement. No surveys were undertaken for terrestrial invertebrates within the Cable Corridor as the temporary nature of the installation of the cable will not significantly impact upon any terrestrial invertebrates, or their habitats, in these areas.

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
Great Crested Newt (**Appendix 8-E: Great Crested Newt**) of this ES **[EN010154/APP/6.3]**)	Habitat Suitability Index (HSI) surveys to evaluate the suitability of ponds and their potential to support Great Crested Newt (Ref 8-62). Further to the HSI assessment, suitable (as defined by the results of the HSI survey) and accessible water bodies identified within the Survey Area were then scoped in for Environmental DNA (eDNA) survey (Ref 8-63) to determine presence or absence of Great Crested Newt.	Surveys undertaken between March and April 2023, May to June 2024 and in May 2025.	Where possible, HSI surveys have been undertaken on water bodies within 250m of the DCO Site and, where further survey was identified as being required (based on the HSI score), using eDNA methods.	With reference to published guidance, habitats within and up to 250m of the DCO Site could constitute significant foraging areas, hibernation or resting sites for Great Crested Newt, which typically utilise terrestrial habitat up to 500m from their breeding ponds (Ref 8-64). However, 250m is an appropriate Survey Area from the DCO Site for HSI and eDNA surveys, acknowledging that there is a notable decrease in abundance of Great Crested Newt beyond a distance of 250m from a breeding pond (Ref 8-65).
Reptiles (and Common Toad *Bufo bufo*) (**Appendix 8-F: Reptiles and Common Toad**) of this ES **[EN010154/APP/6.3]**)	Surveys of terrestrial habitats for reptiles and Common Toad to record species presence (or absence) using artificial refugia and observations of species in accordance with standard guidance for survey (Ref 8-66, Ref 8-67).	Surveys completed in May, August and September 2023 and in May, June, August and September 2024.	Suitable habitat for reptiles and Common Toad (such as grassland or field margins) within the Principal Site that is potentially directly impacted by the Proposed Development.	With reference to published guidance, the Survey Area provides sufficient information on reptile and amphibian presence within the Principal Site, acknowledging that habitats that have the potential to be permanently

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
	Surveys of aquatic habitats, which take place from the edges of water bodies, made observations and sightings of amphibians in the water, including tadpoles and spawn.			impacted (i.e. lost) by the Proposed Development and potentially supporting reptiles and Common Toad are within this area.
Breeding birds (including farmland birds) (**Appendix 8-G: Breeding Birds**) of this ES **[EN010154/APP/6.3]**)	Surveys for breeding birds are based on a standard territory mapping method for surveying breeding birds (Ref 8-68, Ref 8-69) and were adapted where necessary to include species-specific methods (as detailed in 'Bird Monitoring Methods' (Ref 8-68)) for other species, as required.	Surveys for breeding birds undertaken within the Survey Area between April and July 2023; and April and early September 2024.	For the general breeding bird assemblage, the Survey Area is the land within the DCO Site and up to 50m from the DCO Site. For species of greater conservation value and/ or higher sensitivity to potential noise or visual disturbance, where any such species were recorded, the survey area was extended up to 200m from the DCO Site.	Standardised survey zones for assessing the impacts of development on bird populations do not exist, however, the Survey Areas provide information on the breeding birds within the area immediately surrounding and contiguous with the DCO Site, where birds may potentially be adversely affected. Published guidance (Ref 8-70) on disturbance distances for specially protected species e.g. those listed on Schedule 1 of the WCA (Ref 8-1) were used to define the Survey Area for any such species likely to be present.
Non-breeding birds (including farmland birds) (**Appendix 8-H: Non-**	Non-breeding bird surveys, using an adapted survey method, including	Surveys for non-breeding birds undertaken within the Survey Area between	The land within the DCO Site and to a maximum of 50m from the DCO Site,	Whilst standardised survey zones for assessing the impacts of development on

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
breeding Birds) of this ES **[EN010154/APP/6.3]**)	frequent stopping points to view and observe bird behaviour (Ref 8-68, Ref 8-69).	November 2023 and March 2024.	extended to up to 200m where any species of greater conservation value and/ or higher sensitivity to potential noise or visual disturbance were recorded.	bird populations do not exist, the Survey Area provides information on the non-breeding bird population within the area immediately surrounding and contiguous with the DCO Site, where birds may potentially be adversely affected, either directly or indirectly. Therefore, the Survey Area is sufficient to determine the likely impacts of the Proposed Development on non-breeding bird species occurring or likely to occur in the area.
Bats – Daytime Bat Walkover (DBW) Survey (**Appendix 8-I: Bats**) of this ES **[EN010154/APP/6.3]**)	Trees to be impacted or subject to disturbance (above existing levels) were subject to a DBW survey in accordance with The Bat Conservation Trust guidance (Ref 8-71).	The DBW survey was undertaken on multiple dates in October 2023, July 2024, October 2024 and November 2024.	Relevant features (i.e. trees) within the DCO Site and up to 15m from the DCO Site, where accessible and likely to be impacted by the Proposed Development.	Using professional judgement and with reference to published guidance, the DBW survey provides sufficient information on the location of trees that are suitable for roosting bats and these data were used to inform design and appropriate buffers around features.

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
Bats – Night-time Bat Walkover (NBW) (**Appendix 8-I: Bats**) of this ES **[EN010154/APP/6.3]**)	Walked transect routes, to cover suitable areas of affected habitats within the DCO Site; each transect surveyed once in spring, summer and autumn. The survey method is based upon published guidance available in Spring 2023 (Ref 8-72), tailored as necessary to suit the Principal Site. The surveys were supplemented by the deployment of two static bat detectors per transect.	The NBW was completed within the Principal Site, using ten transects routes that were surveyed once in each season (spring, summer and autumn) between May and September 2023 (seven transects), or May and September 2024 (three transects).	Ten transects sampling representative habitats within the DCO Site.	Using professional judgement and with reference to published guidance, the Survey Area provides sufficient information on bat activity (commuting and foraging) within the DCO Site and where impacts are predicted, assessing commuting and foraging habitat and nearby roosts, and enabling determination of impacts on bat populations occurring within, or adjacent to, the DCO Site, acknowledging that any impacts within the Cable Corridor will be temporary and loss of important features (such as hedgerows) are minimised or avoided.
Riparian mammals (Water Vole *Arvicola amphibius*, Otter *Lutra lutra* and the INNS, Mink *Mustela vison*) (**Appendix 8-J: Riparian Mammals**) of this ES **[EN010154/APP/6.3]**)	A Habitat Suitability Assessment (HSA) was undertaken to determine the suitability of each watercourse or water body for riparian mammals.	The HSA was predominantly undertaken in May 2023 and to other areas of the DCO Site as access became available, with detailed surveys undertaken, as required in	All water bodies and watercourses within the DCO Site (and to a maximum of 10m from the DCO Site where access was permitted), identified as being potentially	With reference to published guidance and using professional judgement, surveying riparian habitats up to 10m (Water Vole) and 200m (Otter) from the DCO Site is sufficient to

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
	Watercourses and water bodies, deemed suitable for riparian mammals were then surveyed for evidence of riparian mammals, following standard guidance for surveying Water Vole (Ref 8-73, Ref 8-74) and for Otter (Ref 8-75, Ref 8-76, Ref 8-77). Any evidence of Mink was also recorded, using these survey methods.	May 2023, September 2023, May 2024 and July 2024. Additionally, a camera-trapping survey was undertaken between November and December 2024 within woodland next to the River Witham.	suitable for Water Vole. Note that where suitable habitat for Otter was present, then the survey extended 200m upstream and downstream (where accessible). Additional surveys of woodland in the vicinity of water courses were also checked for Otter holts.	determine presence or absence of riparian mammals within, or adjacent to, the DCO Site as it covers the appropriate avoidance buffers around Water Vole burrows or Otter holts (which may be present outside of the DCO Site).
Badger (**Appendix 8-K: Badger**) of this ES **[EN010154/APP/6.3]**)	A walkover survey, searching for signs of Badger activity (such as setts and latrines), and following standard survey guidance (Ref 8-78, Ref 8-79).	Surveys were undertaken in October, November and December 2023, with any evidence of Badger also recorded during other ecological surveys undertaken between January 2023 and May 2025.	Within the DCO Site and to a maximum of 50m from the DCO Site, where viewable from within the DCO Site or where access was permitted.	With reference to published guidance and applying professional judgement, 50m beyond the DCO Site is an appropriate Survey Area as it covers the 30m distance of avoidance around setts at which direct or indirect effects on Badger setts could occur.
Invasive non-native species (INNS)	Any INNS species observations have been recorded during other ecological surveys and details on any INNS plants includes notes on precise location and stand size.	Undertaken alongside other ecological surveys between January 2023 and May 2025.	Observations of any INNS species were recorded whilst undertaking other ecological surveys across the DCO Site.	The presence of any INNS were recorded within the DCO Site and up to 50m from the DCO Site and any presence of INNS was used to inform on any avoid measures to reduce the spread of any INNS species

Survey (and relevant technical appendix)	Survey Method	Survey Period	Survey Area	Supporting Notes
	Aquatic and riparian INNS were surveyed for as part of the aquatic ecology baseline.			before, during and after construction.

Biodiversity Net Gain (BNG)

8.5.15 BNG is a quantitative process applied to development and the Chartered Institute for Ecology and Environmental Management (CIEEM) defines BNG (Ref 8-80) as "*development that leaves biodiversity in a better state than before"* and involves *"an approach where developers work with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation*". BNG is achieved when measurable improvements for biodiversity are delivered in association with a development through the creation of new habitats or enhancement and management of existing habitats. Whilst BNG allows for these measures to be provided within the DCO Site, outside of this, or in combination, the Proposed Development will deliver BNG within the Principal Site, through the implementation of measures such as field boundary enhancements and planting appropriate grassland seed mixes.

8.5.16 Paragraph 4.6.6 of NPS EN-1 (Ref 8-17) also sets out how BNG should be addressed for Energy NSIP proposals stating that "*proposals should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity, where possible*"; and, in paragraph 4.6.10 that "*biodiversity net gain should be applied after compliance with the mitigation hierarchy* [as presented in paragraph 8.5.17] *and does not change or replace existing environmental obligations"*.

8.5.17 Compliance with planning policy in the NPPF (Ref 8-20) requires that the Proposed Development considers and engages a mitigation hierarchy, requiring the highest level to be applied, where practicable. The mitigation hierarchy presented below, based on the CIEEM (Ref 8-23) principles of avoidance, mitigation, compensation and enhancement, is also fundamental to BNG and there are four sequential steps that must be taken throughout the lifecycle of a project, where there is potential for impacts on relevant ecological features:

a. Avoidance – actions taken to avoid causing impacts to the environment prior to beginning development (e.g. moving part of the development to a different location).

b. Minimisation – measures taken to reduce the duration, intensity, extent and/ or likelihood of the unavoidable environmental impacts caused by development (e.g. adapting the development design to minimise impacts).

c. Restoration or rehabilitation – actions taken to repair environmental degradation or damage following unavoidable impacts caused by development.

d. Offsets – measures taken to compensate for any adverse environmental impacts caused by development which cannot be avoided, minimised and/ or restored (e.g. including habitat creation to offset losses).

8.5.18 Surveys to inform the BNG assessment have been undertaken in 2024 by appropriately trained and qualified surveyors, as appropriate, to record the area (or length) of each habitat measured along with a habitat condition

assessment in line with UKHab (Ref 8-55) and guidance for river and ditch condition assessment (Ref 8-81, Ref 8-82). Biodiversity metrics provide a measure of overall biodiversity value based on habitat type, area, condition, strategic significance and distinctiveness. The current approved metric is Defra's Statutory Biodiversity Metric Tool (Ref 8-83) that allows a value to be measured, in this case biodiversity, which is calculated pre- and post-development for three habitat components: habitats, watercourses, (rivers and streams) and hedgerows. The change in biodiversity units is calculated for each component and indicates either a net loss, a net gain or no change in biodiversity.

8.5.19 The **Biodiversity Net Gain Report [EN010154/APP/7.12]** has been undertaken in line with the requirements of the Environment Act (Ref 8-6), the NPPF (Ref 8-20) and local planning policy, including the Central Lincolnshire Local Plan (Ref 8-21). Prescriptions for the establishment, long term management and monitoring of habitat creation measures that would deliver BNG are also included within the **Framework LEMP [EN010154/APP/7.15]**.

Impact Assessment Method

Assessment Criteria

8.5.20 The assessment presented within this Chapter has been undertaken in accordance with best practice guidance for Ecological Impact Assessment (EcIA), issued by the CIEEM (the CIEEM guidelines) (Ref 8-23). The aims of the assessment are to:

a. Identify (from a combination of targeted desk-based study and field survey work) and evaluate any relevant important ecological features (IEFs), which include designated sites, priority habitats, protected species and invasive non-native species (INNS)), that are present and might be impacted by the Proposed Development (both those likely to be present at the time works begin and those predicted to be present at a set time in the future), placing their relative nature conservation importance into geographic context, which is then used to define the relevant IEFs that need to be considered further;

b. Identify the changes or perturbations predicted to result as a consequence of the Proposed Development (i.e., the potential impacts) that could potentially affect relevant IEFs (either directly or indirectly) and their conservation designations and contribution to local (and if appropriate county, regional and national) biodiversity. Established best-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are also described and are taken into account;

c. Provide an assessment of the likely effects (positive or negative) on relevant IEFs and, where possible, these are quantified to describe the significance of potential affects (taking into account impacts avoidance design measures and management activities);

d. Set out what steps will be taken to adhere to legal requirements relating to the relevant ecological features concerned;

e. Develop, where practicable, measures to avoid or reduce any predicted significant effects, in conjunction with other elements of the design (including mitigation for other environmental disciplines) and if necessary includes measures to compensate for effects on relevant IEFs, where the level of detail provided is proportionate to the scale of the development and the complexity of its potential impacts; and

f. Report any residual effects of the Proposed Development and where enhancement and net gains in biodiversity (BNG) are included.

8.5.21 It is not necessary in the assessment to address all habitats and species with potential to occur in the relevant Study Areas and instead the focus is on those that are "relevant" i.e., ecological features that are considered to be important (IEFs) and potentially affected by the Proposed Development. This does not mean that efforts should not be made to safeguard wider biodiversity, including any combined and cumulative effects and requirements for this have been considered, where appropriate.

Determining Importance

8.5.22 To support a focussed assessment, there is a need to determine the scale at which the relevant ecological features identified through the desk studies and field surveys undertaken for the Proposed Development are of value. The value of each relevant ecological feature has been defined with reference to the geographical level at which it matters, informed through relevant planning policy and legislation (see **Appendix 8-A: Ecology Legislation, Planning Policy Context and Guidance** of this ES **[EN010154/APP/6.3]**) which is important in demonstrating how the Proposed Development will comply with statutory requirements and policy objectives for biodiversity, in accordance with Section 4.3 of the CIEEM guidelines (Ref 8-23).

8.5.23 Species populations are valued on the basis of their size, recognised status (such as through published lists of species of conservation concern and designation of BAP status) and legal protection.

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

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

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

8.5.27 For the purposes of the assessment within this Chapter, only ecological features of at least Local importance are considered as IEFs that require assessment for potential significant effects. Whilst consideration of impacts at all geographic scales is important, features of less than Local importance (i.e. of Site importance) are common and widespread (therefore of no local value) and are not legally protected or included within local planning policy. The CIEEM guidelines (Ref 8-23) make it clear that there is no need to "*carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable*".

8.5.28 Assessing the value of features requires consideration of both existing and future predicted baseline conditions. Therefore, the description and valuation of ecological features takes account of any likely changes, such as trends in the population size or distribution of species, likely changes to the extent of habitats and the effects of other developments or land use changes, as described in **Section 8.8** of this Chapter.

8.5.29 A summary of the value (importance) of ecological features and the geographical frames of reference used for this assessment, based on Section 4.7 in the CIEEM guidelines (Ref 8-23), is presented in **Table 8-5**.

Table 8-5: Summary of sensitivity of ecological features, according to geographic context

Sensitivity (Value)	Geographic Frame of Reference	Examples
Very High	International (or European)	European sites, protected through international legislation, such as SACs (including candidate SACs), SPAs (including potential SPAs), normally within the geographic area of Europe. Ramsar sites (including proposed sites), which are designated under international convention are also included. Areas of habitat that would meet the selection criteria for designation as a European or Ramsar site. Species occurring in numbers approaching that of international importance (i.e., >1% of a biogeographic population) that would meet the selection criteria for designation as a European or Ramsar site. Qualifying species connected to an SAC (such as bats).

Sensitivity (Value)	Geographic Frame of Reference	Examples
High	UK or National (Great Britain), but considering the potential for certain ecological features to be more notable (of higher value) in England, with context relative to Great Britain as a whole)	Statutorily designated sites, protected through national legislation, such as a SSSI or NNR. HaPI (Ref 8-9), considering factors such as its size, distribution and the size of the habitat which would be affected. This includes Ancient Woodland and ancient or veteran trees. Species occurring in numbers approaching that of national importance (i.e., >1% of the UK population) that would meet the relevant SSSI selection criteria (Ref 8-40).
Medium / High	Regional (East Midlands)	Species, including SPI (Ref 8-9), occurring in numbers of greater geographical importance than within the county of Lincolnshire but does not reach the threshold to be of national importance.
Medium	County (Lincolnshire) and/or District (North Kesteven)	Non-statutorily designated sites, identified locally, such as LWSs. HaPI (Ref 8-9) not representing a nationally important habitat but recognised as a habitat which would or may fulfil the criteria for selection as a LWS (Ref 8-41). Species occurring in numbers approaching that of county or district importance (i.e., >1% of the county or district (if known) population).
Low	Local	Areas of habitat that do not meet criteria for selection as LWS in Lincolnshire (Ref 8-41) but are considered to enrich the local area. Species of conservation interest (e.g. SPI, red-listed or legally protected species) that are common and widespread but contribute to the local biodiversity.
Negligible	Site	Species that are common and widespread and are not legally protected or included within local planning policy (e.g. Field Vole *Microtus agrestis*). Areas of habitat that are widespread and of no local value (such as a fence-line or hard-standing).

Characterising Ecological Features

8.5.30 In accordance with Section 1.21 in the CIEEM guidelines (Ref 8-23), the terminology used within the assessment draws a clear distinction between the terms ‘impact’ and ‘effect’. For the purposes of this Chapter these terms are defined as follows:

a. Impact – actions resulting in changes to an ecological feature. For example, construction activities of a development removing a hedgerow; and

b. Effect – outcome resulting from an impact acting upon the conservation status or structure and function of an ecological feature e.g., the effects on a population of bats as a result of the loss of a bat roost.

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

a. Positive or negative - i.e., is the change likely to be in accordance with nature conservation objectives and policy and is that change:

   i. Positive - a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g., increasing the extent of a habitat of conservation value; or

   ii. Negative - a change that reduces the quality of the environment e.g., destruction of habitat.

b. Spatial extent - the spatial or geographical area or distance over which the impact or effect may occur under a suitably representative range of conditions;

c. Magnitude - the 'size', 'amount' or 'intensity' and 'volume' of an impact - this is described on a quantitative basis where possible;

d. Duration - the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species' lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;

e. Timing and frequency - i.e., consideration of the point at which the impact occurs in relation to critical life-stages or seasons; and

f. Reversibility - i.e., is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale i.e., the 60-year lifespan of the Proposed Development (in the context of the feature being assessed).

8.5.32 Combined, these characteristics form the magnitude criteria for effects of the Proposed Development on IEFs as summarised in **Table 8-6**.

Table 8-6: Magnitude criteria for impacts and effects

Magnitude	Magnitude Criteria
High	Changes to the ecological feature pre-development (baseline) condition that almost always have an effect (positively or negatively) on its integrity or conservation status. Such changes may be long-term, permanent and/ or irreversible.
Medium	Changes to the ecological feature baseline condition that in some circumstance may affect (positively or negatively) its integrity or conservation status. Although such changes may be long-term, they are potentially reversible.

Low	Changes to the ecological feature baseline condition that do not usually affect the baseline condition and are often short-term and/or reversible.
Very low	There is no noticeable change to the ecological feature baseline condition.

Significance Criteria

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

a. Not significant - no effect on structure and function, or conservation status; and

b. Significant - structure and function, or conservation status is affected.

8.5.34 Sections 5.24 to 5.28 in the CIEEM guidelines (Ref 8-23) state that effects should be determined as being significant (a 'significant effect') when "*an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g., for a designated site) or broad (e.g., national / local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)*".

8.5.35 Using this information and professional judgement, it is determined whether the effects will be 'significant' or 'not significant' on the structure and integrity of a site or ecosystems or conservation status of habitats and, or species of each ecological feature and the impact significance is determined at the appropriate geographical scale, as presented in **Table 8-5**.

8.5.36 There are a number of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines (Ref 8-23) recommend the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology within this Chapter, the terminology used in the CIEEM guidelines for impact assessment have been translated into the classification of effects scale, as outlined in **Table 8-7**, but still remain consistent with the CIEEM guidelines.

8.5.37 As a rule, major and moderate effects are considered to be significant, whilst minor and neutral/ negligible effects are considered to be not significant. However, professional judgement has been applied throughout this Chapter, taking account of whether the effect is permanent or temporary, its duration

and frequency, whether it is reversible, and/or its likelihood of occurrence. Within this Chapter, ecological effects are only described as being either significant or not significant.

8.5.38 Beneficial effects, as described in **Table 8-7**, are assessed as those where there has, or will be, a change from the ecological baseline that improves (e.g. an increase in habitat or species population). Adverse effects are assessed as those where there will be a change from the ecological baseline that worsens (e.g. a reduction in habitat or decline in species population).

Table 8-7: Significance criteria for effects

Effect classification terminology		Equivalent CIEEM terminology
Major (positive)	beneficial	1) Beneficial effect on structure / function or conservation status at a regional, national or international level; and 2) The extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Moderate (positive)	beneficial	1) Beneficial effect on structure/ function or conservation status at a county level; and 2) The extent, magnitude, frequency, and/or timing of an impact positively affects the integrity or key characteristics of the resource.
Minor (positive)	beneficial	1) Beneficial effect on structure / function or conservation status at a local level; and 2) The extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Negligible		No effect on structure / function or conservation status.
Minor (negative)	adverse	1) Adverse effect on structure / function or conservation status at a local level; and 2) The extent, magnitude, frequency, and/or timing of an impact does not affect the integrity or key characteristics of the resource.
Moderate (negative)	adverse	1) Adverse effect on structure / function or conservation status at a county level; and 2) The extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.
Major (negative)	adverse	1) Adverse effect on structure / function or conservation status at a regional, national or international level; and 2) The extent, magnitude, frequency, and/or timing of an impact negatively affects the integrity or key characteristics of the resource.

8.6 Baseline Conditions

8.6.1 This section identifies and describes the existing and future baseline conditions for the Proposed Development, based on desk study and field surveys undertaken as of May 2025 and use of the collaborative dataset (where relevant, see paragraph 8.5.11 of this Chapter).

Sites Statutorily Designated for their Biodiversity Value

8.6.2 There are no sites statutorily designated for their biodiversity value at an international or European level within 10km of the DCO Site. The only European site within 30km of the Proposed Development is Birklands and Bilhaugh SAC, which is approximately 24km from the DCO Site and is designated for its Oak (*Quercus robur* and *Quercus petraea*) woodland habitats. There are no European sites within 30km of the DCO Site for which birds or bats are a qualifying feature.

8.6.3 Beyond the 30km Study Area, the River Witham and minor watercourses connected to it are linked to the Wash SPA/Ramsar and Along the River Witham, The Wash and North Norfolk Coast SAC is approximately 70km downstream of the Proposed Development. At this distance, there are no potential impacts arising and the Proposed Development will not have a likely significant effect upon these sites. Additionally, the design of the Proposed Development includes a minimum 10m buffer from the River Witham, avoiding any adverse impacts to this watercourse and in turn any European sites connected at any distance to this watercourse (see also the **Habitat Regulations Assessment (HRA) Report** of this ES **[EN010154/APP/7.13]**).

8.6.4 As concluded in the **Habitat Regulations Assessment (HRA) Report** of this ES **[EN010154/APP/7.13]** and agreed with Natural England (see **Table 8-2** of this Chapter), there will be no likely significant effects on European sites arising from the Proposed Development.

8.6.5 There are two sites statutorily designated for their biodiversity value at a national level within the Study Area set out in **Section 8.5.4** of this Chapter. These are Whisby Nature Park LNR, which is approximately 410m north of the Principal Site and Swanholme Lakes LNR and SSSI, which is approximately 4km north east of the Principal Site.

8.6.6 A description of these designated sites is presented in **Table 8-8**. Designation details are taken from citation documents and published online by the Joint Nature Conservation Committee (JNCC) for the individual sites. The locations of these statutorily designated sites, relevant to the Proposed Development, are presented in **Figure 8-1: Sites statutorily designated for their biodiversity value** of this ES **[EN010154/APP/6.2]**.

Table 8-8: Sites statutorily designated for their biodiversity value within 10km (international) and 5km (national) of the DCO Site

Statutorily designated site name and designation	Area – hectares (ha)	Description of statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
Whisby Nature Park LNR	110.6	This LNR is a complex of small, medium and large flooded gravel pits, with one flowing stream (the Pike Drain) which is a small agricultural channel that runs east-west across the southern part of the LNR. The LNR forms part of the Witham Valley Country Park. Some former pits support wet Willow *Salix species* scrub and developed into clay grassland and others are undergoing systematic coppicing to maintain more open scrub conditions. Dense Willow and Birch *Betula species* scrub occurs over wide areas in the north on spoil in between the pits and is gradually developing tall canopy scrub resembling woodland. A small Oak *Quercus sp.* woodland of some maturity lies alongside a railway crossing. Dry, open expanses of gravel-pit waste are developing interesting plant communities. Some more orthodox grasslands, both dry and wet, support a variety of flowering plants, and the richest of these is the orchid glade.	410m north of the Principal Site
Swanholme Lakes LNR / SSSI	57.5	This SSSI forms part of the Witham Valley Country Park and is formed from flooded sand and gravel pits, the open water supporting several uncommon species of submerged plants and is surrounded by a species-rich mosaic of habitats. The sandy heath, willow carr and *Sphagnum* bog form an area of county importance for amphibians and reptiles and support several invertebrate groups, including grasshoppers and crickets, bumblebees and solitary wasps. Important species, found within this LNR / SSSI include several pondweeds (species of *Potamogeton*) and Water Soldier *Stratiotes aloides*.	4km north east of the Principal Site

Statutorily designated site name and designation	Area – hectares (ha)	Description of statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
		The lakes also support many aquatic invertebrate species, including 17 species of dragonfly and damselfly. Three species (Red-eyed Damselfly *Erythroma najas*, Variable Damselfly *Coenagrion pulchellum* and Ruddy Darter *Sympetrum sanguineum* are rare in Lincolnshire.	

Sites Non-Statutorily Designated for their Biodiversity Value

8.6.7 There are 29 sites that are non-statutorily designated for their biodiversity value within 2km of the DCO Site (as per the Study Area in paragraph 8.5.4 of this Chapter) and these are presented in **Table 8-9** and listed in ascending order, with those closest to the DCO Site listed first. These sites have been designated as Local Wildlife Sites (LWS) for their biodiversity value at a county level and are known to have supporting value to a wide variety of protected and ecologically important species and/ or habitats.

8.6.8 Site information descriptions are summarised in **Table 8-9** and are taken from non-statutory site descriptions received as part of the desk study through LERC. The locations of these non-statutorily designated sites, relevant to the Proposed Development, are presented in **Figure 8-2: Non-statutory sites designated for their biodiversity value** of this ES **[EN010154/APP/6.2]**.

Table 8-9: Sites non-statutorily designated for their biodiversity value within 2km of the DCO Site

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
River Witham, Aubourn to Beckingham	11.8km	The banks are managed through grazing or mowing. Aquatic plants occurring are Water-starwort *Callitriche stagnalis*, Spiked Water-milfoil *Myriophyllum spicatum*, River Water-crowfoot *Ranunculus fluitans*, Fennel Pond Weed *Stuckenia pectinata* and Unbranched Bur-weed *Sparganium emersum*.	Within the Principal Site.

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
Navenby, Green Man Road Verges	6km	Verge made up of calcareous grassland.	Within the Cable Corridor.
Tunman Wood (including Stocking Wood)	38.2ha	Part of the Witham Valley Country Park, this is a managed, ancient woodland with a mosaic of high forest trees, cleared areas with scrub and invading saplings with intermediate stands. However, a relatively poor ground flora.	Adjacent to the Principal Site.
Tunman Wood North	15.4ha	This site is the northern part of Tunman Wood LWS, located close to Whisby Nature Park LNR. Planted trees occur throughout, although the network of rides support most flora and fauna. Corsican Pine *Pinus nigra* is the dominant plantation tree here, with smaller numbers of Scots Pine *Pinus sylvestris*, Beech *Fagus sylvatica* and Pedunculate Oak *Quercus robur*.	Adjacent to the Principal Site.
Navenby Heath Road Verges	2.8km	Verge made up of calcareous grassland.	Adjacent to the Cable Corridor.
Gorse Lane	1.3km	A narrow lane, running north from Gorse Hill Lane (TF014563), east of Wellingore, to a minor road connecting Navenby to the A15. It is separated from arable fields on the west side by a thick, unmanaged hedge. On the east side, the southern half merges into Gorse Hill Covert, a small mainly deciduous wood, and the northern half is separated from arable fields by a hedge along most of its length.	Within 5m of the Cable Corridor, to the south.
High Dike, Coleby Mill to Harmston Verges	2.1km	Verges made up of calcareous grassland.	310m north of the Cable Corridor.
Whisby Nature Park, Whisby Pits Complex	110.6ha	Also, an LNR; see **Table 8-8**.	410m north of the Principal Site.

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
Boothby Graffoe Road Verges	0.4ha	Calcareous grassland verge that slopes down from the south side of the B1202. Plants that it supports include Small Scabious *Scabiosa columbaria*, Common Bird's-foot-trefoil *Lotus corniculatus*, Burnet Saxifrage *Pimpinella saxifrage*, Salad Burnet *Sanguisorba minor*, Greater Knapweed *Centaurea scabiosa*, Lady's Bedstraw *Galium verum* and Upright Brome *Bromus erectus*.	595m north of the Cable Corridor.
A15, Green Man Road to Cuckoo Lane	3.2km	Strip of calcareous grassland.	675m east of the Cable Corridor.
Green Man Lane	3.5km	Verge made up of calcareous grassland. Calcareous grassland indicator species are numerous in this verge, but their distribution is patchy. The grassland is interspersed by coarse, dense vegetation such as Bramble *Rubus fruticosus*.	705m east of the Cable Corridor.
Brant Plantation	10.7ha	Plantation that is largely dominated by Poplar *Populus* aggregate and Sycamore *Acer pseudoplatanus*. Other woody species that grow across the plantation include Aspen *Populus tremula*, Pedunculate Oak, Silver Birch *Betula pendula*, Downy Birch *Betula pubescens* and Honeysuckle *Lonicera* aggregate The lower canopies and ground flora comprises of Male-fern *Dryopteris filix-mas*, Wood Millet *Milium effusum*, False Brome *Brachypodium sylvaticum*, Buckler Ferns *Dryopteris dilatate*, Herb-Robert *Geranium robertianum*, Red Campion *Silene dioica*, Foxglove *Digitalis purpurea* and Three-veined Sandwort *Moehringia trinervia*. The area closest to the river includes species such as Creeping-Jenny *Lysimachia nummularia*, Soft Rush *Juncus effusus*, Ragged-Robin *Silene flos-cuculi*, Marsh Bedstraw *Galium palustre* and Silverweed *Potentilla*	715m north of the Principal Site.

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
		anserina. There is a long grass area to the eastern margin of the wood, supporting species such as Tufted Vetch *Vicia cracca* and Common Bird's-foot-trefoil. A range of bird and invertebrates occupy the plantation including Bullfinch *Pyrrhula pyrrhula*, Willow Tit *Poecile montanus*, Wren *Troglodytes troglodytes*, Migrant Hawker *Aeshna mixta*, Common Darter *Sympetrum striolatum* and Emerald Damselfly *Lestes sponsa*.	
Ski World, Whisby Pits Complex	25.2ha	Three eutrophic lakes (flooded gravel pits) dominated by Canadian Pondweed *Elodea canadensis* and a significant amount of Blanketweed *Cladophora glomerata*, with smaller amounts of Fennel-leaved Pondweed *Potamogeton pectinatus* and Curled Pondweed *Potamogeton crispus*. Much of the surrounding land is managed as a caravan and camping site with large areas of improved grassland and amenity planting, however remnants of the original heath/dry grassland survive in very limited areas.	830m north of the Principal Site.
Norton Big Wood	36.1ha	A large area of woodland, the majority of which is ancient semi-natural, comprising a mix of planted conifers and hardwoods and longer established native broadleaves.	850m west of the Principal Site.
Hykeham Railway Line, Whisby Nature Park	3.2ha	A section of active railway line running through Whisby Nature Park. Vegetation cover is largely concentrated in a narrow (c.1-2m wide) belt on both sides of the railway, adjacent to the fence line. This mainly comprises Bramble, scrub and tall ruderal vegetation, including species such as Rosebay Willowherb *Chamaenerion angustifolium*, Nettle *Urtica dioica*, Field Horsetail *Equisetum arvense* and, occasionally, Common Hemp-nettle *Galeopsis*	870m north of the Principal Site.

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
		tetrahit. There are also some small patches of semi-improved neutral grassland vegetation dominated by False Oat-grass *Arrhenatherum elatius*, Couch *Elymus repens* and other tall coarse grass species. Occasional patches of shorter turf occur and feature species such as Common Bent *Agrostis capillaris* and Sheep's Sorrel *Rumex acetosella*. Occasional shrubs and trees occur on the fence line, including Silver Birch, Pedunculate Oak, Hawthorn *Crataegus monogyna*, Gorse *Ulex europaeus* and Hazel *Corylus avellana*. A short section of ditch occurs adjacent to the southern boundary towards the eastern end of the section.	
Mr Nevile's Pits West, Whisby Pits Complex	7.2ha	A flooded sand and gravel pit bordered by Willow woodland.	905m north of the Principal Site.
Mr Nevile's Pits East, Whisby Pits Complex	11.4ha	A large lake (flooded gravel pit) with numerous smaller peripheral, seasonally flooded, hollows. The open water is surrounded by Silver Birch and Grey Willow *Salix cinerea* woodland. Mature Ash *Fraxinus excelsior* and Oak occur towards the edges where the woodland is more open, grading into discrete areas of rough grassland and acid scrub. Nearer the water's edge, the only truly aquatic species recorded was Duckweed *Lemna minor*.	1,020m north of the Principal Site.
North Hykeham Gravel Pit	94.2ha	Made up of two areas - Cemex Angling Lake and Millennium Green. Cemex Angling Lake is formed of gravel pits with three small islands covered in woodland. The lake itself supports limited flora, including Nuttall's Pondweed *Elodea nuttallii* and Spiked Water-milfoil. Other emergent species such as Yellow Flag Iris *Iris pseudacorus* and Bulrush	1,035m north of the Principal Site.

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
		Typha latifolia are also present. There is a fragment of woodland on the northern edge which is dominated by mature Pedunculate Oak and Silver Birch. Hazel, Alder Buckthorn *Frangula alnus* are most frequent in the understories. On the southern edge of the lake a peninsula (SK925662) is covered by Birch woodland. To the south of this peninsula lie ridges of sand which have been colonised by Broom *Cytisus scoparius*. Juniper Haircap Moss *Polytrichum juniperinum*, Sand Fibrecap (a fungi) *Inocybe arenicola* and a species of *Cladonia* lichen are also noted here. An area of wet scrub and semi-improved neutral grassland can be found to the south of the lake supporting a variety of species.	
Butt Lane Pit	2.2ha	Flooded pit which is used as an angling lake and surrounded by acid woodland. Spiked Water-milfoil dominates the aquatic flora with occasional clumps of Common Water-crowfoot *Ranunculus aquatilis* and Common Water-starwort. Very small areas of acid grassland around the edge of the lake support Common Centaury *Centaurium erythraea*, Wood Small Reed *Calamagrostis epigejos*, Cat's-ear *Hypochaeris radicata*, Leafy Hawkweed *Hieracium umbellatum* and Sheep Sorrel. Area of acid woodland is dominated by Pedunculate Oak, Silver Birch and Downy Birch. Other species include Wild Cherry Prunus avium, Aspen, Alder and Gorse. Rhododendron *Rhododendron ponticum* has invaded the woodland. Fauna species noted in this area include birds, Migrant Hawker and Speckled Wood *Pararge aegeria*.	1,080m west of the Principal Site.
High Dike, Long Lane to	5.8km	Verge made up of calcareous grassland.	1,220m west of the Cable Corridor.

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
Navenby Verges			
Coleby, Heath Road Verges	2.2km	Verge made up of calcareous grassland.	1,250m north of the Cable Corridor.
Gorse Hill Lane Verges	0.4km	Verge made up of calcareous grassland.	1,255m south of the Cable Corridor.
Eagle Hall Wood	55ha	Ancient, replanted woodland supporting Pedunculate Oak and Ash that are dominant across the site and some ancient trees remain, as do old, coppiced Hazel. Wet areas in the north east of the site are dominated by dense scrub and rides in the woodland have ditches along them.	1,350m west of the Principal Site.
Teal's Lake, Whisby Pits Complex	32.8ha	Large, flooded gravel pit surrounded by areas of grazing marsh/damp grassland scrub and small patches of remnant dry and acid grassland. Canadian Pondweed dominates the open water. Margins support stands of Common Reed *Phragmites australis* and Bulrush. New Zealand Pigmyweed *Crassula helmsii,* an invasive plant, dominates the marginal zones of the entire lake. Much of the lake is bordered by a dense Willow and Birch woodland. Dry acid grassland fragments around the perimeter of the site support such species as Wormwood *Artemisia absinthium*, Broom and Vipers Bugloss *Echium vulgare*.	1,510m north of the Principal Site.
Hawdin's Wood	49.8ha	A large area of damp acid woodland, forming part of a more extensive woodland. The site is a former conifer plantation, supporting Scot's Pine and Larch *Larix decidua*. A good number of ancient woodland indicator species are present including Wood Anemone *Anemone nemorosa*, Wood Sedge *Carex sylvatica*, Scaly Male Fern *Dryopteris affinis* and Bluebell *Hyacinthoides non-scripta*. Damp acid rides support a typical flora with	1,550m west of the Principal Site.

Non-statutorily designated site name and designation	Area – hectares (ha) / length (km)	Description of non-statutorily designated site	Approximate distance (metres (m)) and direction from closest point of the DCO Site
		abundant common forbs. Large areas of the site are dominated by a vigorous community of Bracken *Pteridium aquilinum* and Bramble. There is a pond near the centre of the area.	
Wellingore Heath Road Verges	0.8km	Verge made up of calcareous grassland.	1,630m west of the Cable Corridor.
Brant Washlands	36.5ha	Two fields comprising wet woodland wet pasture, ponds and scrapes that are both rich in flora and fauna.	1,650m north of the Principal Site.
Harmston Quarry	9.4ha	An active limestone quarry lying within an arable landscape. Small areas of calcareous grassland along the site's northern boundary with the road.	1,885m north of the Cable Corridor.
Stapleford Moor	128.1ha	Largely coniferous plantation of Scots Pine with Silver Birch with Rowan *Sorbus aucuparia* and broadleaved woodland on the edges and in discrete patches in the north and south east. Very limited areas of acid grassland/heath exist in small clearings in the north of the wood which support a good diversity of species typical of this habitat type. The soil across most of the site is a layer of peaty humus over sand. Many of the smaller paths are largely fringed by Purple Moor-grass *Molinia caerulea*, which is also frequent under the trees in some places. The clearings are dominated by Sheep's Fescue *Festuca ovina* which forms a low tussocky sward.	1,950m west of the Principal Site.

8.6.9 In addition, the desk study identified three areas of Ancient Woodland within 2km of the DCO Site (as presented in **Figure 8-3: Location of Ancient Woodland and Priority Habitats identified during the desk study** of this ES **[EN010154/APP/6.2]**), these being:

a. Tunman / Housham Woods (part of Tunman Wood LWS and also including Stocking Wood), which is immediately adjacent to the Principal Site;

b. Hawdin's / Norton Big Wood (part of Norton Big Wood) which is approximately 850m west of the Cable Corridor; and

c. Great Low Wood, which is approximately 1,350m north west of the Principal Site.

Habitats

8.6.10 As part of the desk study, a review of the MAGIC website (Ref 8-48) identified Habitats of Principal Importance (HaPI) (Ref 8-9) as being present or likely to be present within the Study Area (see **Table 8-10** for details of any priority habitats that occur within the DCO Site):

a. Coastal and floodplain grazing marsh;

b. Deciduous woodland;

c. Lowland calcareous grassland;

d. Lowland dry acid grassland;

e. Lowland heathland;

f. Reedbeds; and

g. Traditional orchard.

8.6.11 The locations of these HaPI, relevant to the Proposed Development are presented in **Figure 8-3: Location of Ancient Woodland and Priority Habitats identified during the desk study** of this ES **[EN010154/APP/6.2]**.

8.6.12 Field surveys identified that the land within and surrounding the DCO Site (approximately 1,368ha) is flat and dominated by arable agriculture (approximately 83% of the DCO Site), with the fields being intersected by a network of drainage ditches within the catchment of the River Witham and River Brant.

8.6.13 The terrestrial habitats present within the DCO Site, as presented in **Table 8-10**, were identified during the habitat survey, undertaken in June, August, September and November 2023; and May 2024. These habitats are the broad habitat types found within the DCO Site and were further defined by detailed habitat surveys (e.g. of terrestrial flora) as set out in **Table 8-11** and presented in detail in **Appendix 8-B: Terrestrial Habitats and Notable Flora** of this ES **[EN010154/APP/6.3]**. Combined, these habitat data were utilised to calculate the BNG or net loss to ensure a comprehensive baseline of data for the BNG assessment (as presented in the **Biodiversity Net Gain Report [EN010154/APP/7.12]**).

8.6.14 The locations of these habitats are presented in **Figure 8-4: Habitat Map (drawn to UKHab)** of this ES **[EN010154/APP/6.2]**, which is split over sixteen sheets, owing to the size of the DCO Site.

Table 8-10: Habitat types within the DCO Site (including legally protected and notable terrestrial plants), alongside assessment of biodiversity importance

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
Woodland and forest – other woodland, broad-leaved (including line of trees)	Non-designated mature semi-natural woodland and lines of trees within and adjacent to the DCO Site, with species including Ash, Pedunculate Oak, Elder *Sambucus nigra*, Common Hawthorn and Blackthorn *Prunus spinosa,* with woodland often with a Bramble dominated understorey.	3.14ha / 2.23km	0.23	HaPI – Lowland Mixed Deciduous Woodland and Wet Woodland. LBAP habitat.	District	HaPI (Ref 8-9) but small extent within the DCO Site and this habitat is present more widely beyond the ZoI and unlikely to meet LWS selection criteria within Lincolnshire (Ref 8-41).
Trees, including veteran or ancient trees	The desk study and field surveys identified veteran and ancient trees within the DCO Site and wider 2km Study Area (see **Appendix 10-H: Arboricultural Impact Assessment Appendix A: Tree Constraints Plan** of this ES **[EN010154/APP/6.3]**).	-		HaPI	National	Individual trees are not a HaPI, but can provide suitable habitat for SPI, e.g. bats. Veteran or ancient trees are of greater value, based on their importance as an irreplaceable habitat, similar to Ancient Woodland.
Woodland and forest – other woodland, mixed	Numerous small copses of mixed woodland plantation within the DCO Site, with species including Oak, Birch *Betulus* species, Ash, Common Lime *Tilia* x europaea and Goat Willow *Salix caprea*.	3.36ha	0.25	None	Local	Not a HaPI, includes native tree species of varying age, providing a habitat resource for species such as nesting birds and potentially roosting bats.

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
Heathland and shrub - Mixed scrub / willow scrub	Small areas of mixed and willow scrub (*Salix* species) are found throughout the DCO Site mainly in wetter areas, including along field margins west of the River Brant.	0.88ha	0.06	None	Local	Not a HaPI but adds to the local habitat resource and provides habitat for pollinators and nesting birds.
Grassland - *Arrhenatherum* neutral grassland	Present throughout the DCO Site in poor to moderate condition with moderate species diversity, dominated by False Oat-grass, with frequent Hogweed *Heracleum sphondylium*, occasional to frequent Silverweed, Common Couch, Common Vetch *Vicia sativa* subspecies *segetalis*, Rough Meadow-grass *Poa trivialis,* Tall Fescue *Schedonorus arundinacea*, Common Knapweed *Centaurea nigra* agg., Meadow Vetchling *Lathyrus pratensis*, Meadowsweet *Filipendula ulmaria*, Hedge Woundwort *Stachys sylvatica*, Common Sorrel *Rumex acetosa*, Cow Parsley *Anthriscus sylvestris*, Perforate St.John's-wort *Hypericum perforatum*, Perennial Sow-thistle *Sonchus arvensis*, Rough Meadow-grass, Perennial Rye-grass *Lolium perenne* and	8.26ha	0.60	Coastal and Floodplain Grazing Marsh is a HaPI and Grazing Marsh is an LBAP habitat.	County	Substantial total area of semi-improved neutral grassland associated with road verges and grazing fields to the west of the River Witham, Aubourn to Beckingham LWS is classified as Coastal and Floodplain Grazing Marsh, a HaPI (Ref 8-9), as identified on MAGIC (Ref 8-48).

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
	Meadow Crane's-bill *Geranium pratensis*. More undesirable 'weedy' species in places comprising Common Nettle and Creeping Thistle *Cirsium arvense*.					
Grassland - *Deschampsia* neutral grassland	Tussocky semi-improved grassland, sheep grazed in 2023, but not in 2024. Species include Tufted Hair Grass, Cock's-foot, False Oat-grass, Creeping Thistle, Broad-leaved Dock *Rumex obtusifolius* and Spear Thistle.	9.52ha	0.70	None	Local	Not a HaPI. Recently grazed grassland, species poor, located adjacent to the Coastal and Floodplain Grazing Marsh (above) and of no more than local biodiversity importance.
Grassland – modified grassland	Present along grass verges and managed livestock fields. Species include Tall Fescue, Cock's-foot, Common Knapweed, Broad-leaved Dock, Perennial Rye-grass, Creeping Thistle, Lucerne *Medicago sativa* and Yorkshire fog.	38.96ha	2.85	None	Site	Not a HaPI, species poor, usually managed by mowing or grazing with limited species diversity and biodiversity value.
Grassland - Other calcareous grassland	Roadside verges along the cable corridor, approximately 2 m wide, which are classified as the non-priority habitat type other calcareous grassland and includes part of Navenby, Green Man Road Verges LWS. A strip approximately 0.75m wide, nearest the road is	0.63ha	0.05	None	Local	Not a HaPI. A very small area of habitat, limited to roadside verges in a poor condition, due to being frequently mown close to the road, nutrient enrichment, vehicle damage and scrub encroachment. A scarce habitat resource and potentially of higher value if

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
	regularly mown. Species recorded in this habitat include False Oat-grass, Common Nettle, Yarrow *Achillea millefolium*, Hogweed, Field Scabious *Knautia arvensis*, Field Bindweed *Convolvulus arvensis*, Perennial Rye-grass, White Clover *Trifolium repens*, Common Knapweed, Hedge Woundwort, Black Horehound *Ballota nigra*, Lady's Bedstraw *Galium verum,* Bladder Campion *Silene vulgaris*, Greater Knapweed and Common Poppy *Papaver rhoeas*. It is in poor condition with nutrient enrichment, with some vehicle damage and encroaching scrub from the adjacent hedgerows.					condition improved and of no more than local biodiversity importance. Scope to increase the habitat and increase the biodiversity value.
Grassland – scattered scrub (and lines of scattered scrub)	Small areas of scattered scrub within grassland/field margin habitats are found throughout the DCO Site. Similar species as the hedgerows often with abundant Bramble.	1.86ha / 0.12km	0.14	None	Local	Not a HaPI but adds to the local habitat resource and provides habitat for pollinators and nesting birds.

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
Sparsely vegetated land - Ruderal/Ephemeral	Ruderal, often temporary habitats, often present on recently disturbed land such as arable areas. Species include y Hogweed, Pineappleweed *Matricaria discoidea*, Swine Cress *Lepidium coronopus,* thistles (*Cirsium* species), Broad-leaved Dock, Annual Nettle *Urtica urens*, Bramble and Hairy Willowherb *Epilobium hirsutum*. Often areas of bare ground.	1.34ha	0.1	None	Site	Not a HaPI.
Wetland - other wetlands, swamp	A small area of swamp habitat in a pond and wet area within a field west of the River Witham, with species including Bulrush *Typha latifolia*, Reed Canary Grass *Phalaris arundinacea*, Reed Sweet-grass *Glyceria maxima* and Creeping Bent *Agrostis stolonifera*.	0.30ha	0.02	Coastal and Floodplain Grazing Marsh is a HaPI and Grazing Marsh is an LBAP habitat.	District	Very small extent of swamp habitat within the DCO Site, alongside the River Witham and Brant, some of which is within and a component part of the Coastal and Floodplain Grazing Marsh HaPI.
Other standing water - Pond (non-priority)	Ponds within the DCO Site are predominantly dry, with little to no aquatic vegetation (submerged, floating or emergent) and had little other ecological value (Great Crested Newt confirmed as absent through eDNA).	0.11ha	0.01	Ponds of certain criteria are a HaPI and LBAP habitat.	Local	Ponds can be defined as permanent (or seasonal) water bodies up to 2ha in extent and qualify as being a HaPI if they meet one or more criteria for UKBAP classification, including supporting species of high

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
						conservation importance. Water bodies within the DCO Site are not a stand-alone habitat in the ZoI and do not reach the required level to fulfil the criteria of a priority habitat. Given the lack of status as a HaPI, poor to moderate biological quality and lack of notable species, the ponds were assessed to be of Local importance only.
Other standing water – reservoir	Plastic-lined agricultural reservoir, used for irrigation.	0.68ha	0.05	None	Site	Not a HaPI.
River – Main Rivers (including Ditches)	The River Witham (also an LWS) runs ~~north to south~~south to north in the eastern section of the Principal Site. The River Brant runs south to north~~north to south~~ within the Cable Corridor.	1.54ha	0.11	Importance due to the LWS designation (River Witham)	Up to County	The River Brant qualifies as HaPI due to the presence of Annex II species (Ref 8-2) Spined Loach; the River Witham is designated as a LWS; both are therefore of County importance.
Ditch – wide (including dry ditches)	Drainage ditches are associated with every hedgerow, scattered tree line and field edge within the DCO Site and act as field boundaries.	2.49ha / 9.18km	0.18	None	Site	Other watercourses in the DCO Site do not qualify as HaPI and are therefore of Site importance only as this resource is widely present across Lincolnshire.

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
Cropland – cereal crops	Over 80% of the DCO Site is cultivated and used for the production of arable crops, including Brassica sp. and Wheat.	1,135ha	82.9	None	Site	Intensively managed arable farmland is not a HaPI.
Cropland – arable field margins	Arable field margins were present in 69 arable fields surveyed with a total of 23 important arable plant species present in total within the DCO Site. Notable species included those identified in the Great Britain and England vascular plant Red Data Lists (Ref 8-56); comprising Common Cudweed *Filago germanica*, Corn Marigold *Glebionis segetum*, Corn Spurrey *Spergula arvensis*, Dwarf Spurge *Euphorbia exigua*, Narrow-fruited Cornsalad *Valerianella dentata*, Night-flowering Catchfly *Silene noctiflora*, Rye Brome and Stinking Chamomile *Anthemis cotula*.	2.31ha	0.17	Arable field margins are a HaPI and LBAP habitat.	Local to National	One field (AF29) was assessed as National importance, derived predominantly from the presence of populations of three Red Data List plant species (Corn Marigold, Dwarf Spurge and Stinking Chamomile); two fields were of County importance (AF17 and AF72); and the remaining fields with scarce arable flora present are assessed as Local importance.
Cropland - Arable field margins pollen and nectar	Sown/managed field margins within the DCO Site. Species often include Phacelia *Phacelia tanacetifolia* and Clovers (*Trifolium* species).	0.55ha	0.04	Arable field margins are a HaPI and LBAP habitat.	Local	Limited area within the DCO Site. Arable margins that are sown with wild flowers to provide pollen and nectar resources for invertebrates qualify as a HaPI (Ref 8-9).

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
Cropland - Arable field margins tussocky	Sown/managed field margins within the DCO Site. Species often include Cock's-foot *Dactylis glomerata*, Rough-Meadow-grass and False Oat-grass	4.20ha	0.31	Arable field margins are a HaPI and LBAP habitat.	District	Arable margins providing permanent, grass strips with mixtures of tussocky and fine-leaved grasses qualify as a HaPI (Ref 8-9).
Cropland - Arable field margins wild bird mix	Sown/managed field margins within the DCO Site. Species often include Flax *Linum usitatissimum* and Wild Radish *Raphanus raphanistrum*.	0.18ha	<0.1	Arable field margins are a HaPI and LBAP habitat.	Local	Limited area within the DCO Site. Arable margins that are sown to provide seed for wild birds and are allowed to set seed over the winter qualify as a HaPI (Ref 8-9).
Cropland - Arable fields pollen and nectar	Whole fields sown with a pollen and nectar species mix as per the margins.	39.95ha	2.91	None	District	Not a HaPI, but similar biodiversity value to Arable field margins that are a HaPI and LBAP habitat.
Cropland - Arable fields with wild bird mix	A small section of a field sown with a wild bird seed mix as per the margins.	0.44ha	<0.1	None	Local	Limited area within the DCO Site. Not a HaPI, but similar biodiversity value to Arable field margins that are a HaPI and LBAP habitat.
Cropland - Temporary grass and clover leys	These comprise areas that are used for the production of hay or silage. Very species poor, often comprising Italian Rye-grass *Lolium multiflorum*.	93.42	6.81	None	Site	Intensively managed farmland, species poor sown grassland with no or limited wildflower species and used for the production of hay or silage. Not a HaPI.
Native hedgerows – without trees	Network of species-poor and species-rich hedgerows throughout	32.63km	n/a	HaPI and LBAP habitat.	County	HaPI, legally protected under the Hedgerows Regulations (Ref 8-

Broad habitat type and UKHab description (Ref 8-55)	Summary description	Area (ha) or length (km)	% of Site area	Conservation designation	Biodiversity importance	Supporting notes
Native hedgerows – with trees	the DCO Site, >50% of which include trees. Common Hawthorn and Blackthorn dominate and most have some evidence of current management. A few of the hedges are more diverse than others; supporting a number of woody species, including Elm, Ash, Dog Rose *Rosa canina* and Oak standards.	46.33km	n/a			11). There is a network of species-rich and species-poor hedgerows across the DCO Site, 31 of which are 'important' under the Wildlife and Landscape Criteria of the Hedgerows Regulations (Ref 8-11). Further details are included in **Appendix 8-B: Terrestrial Habitats and Notable Flora** of this ES [**EN010154/APP/6.3**].
Dry stone wall	A few walls present along field edges along the Cable Corridor, forming boundary features.	1.62km	n/a	None	Site	Not a HaPI. May have some limited biodiversity value, providing basking and shelter for amphibians and reptiles.
Urban - artificial unvegetated, unsealed surface (including tracks)	Small areas mainly along tracks / paths and an area around a small water body towards the centre of the Principal Site.	5.10ha	0.37	None	Site	Not a HaPI.
Urban – developed land - sealed surface	Areas of hardstanding within the DCO Site	12.00 ha	0.88	None	Site	Not a HaPI.

Protected and Notable Species and INNS

8.6.15 The desk study identified records of protected and notable species, including INNS, from within the 2km search radius from the DCO Site and for the preceding ten years.

8.6.16 **Table 8-11** presents a summary of protected or notable plant and animal species, including invasive non-native species (INNS), that have been identified during the desk study and completed ecological surveys as present, or potentially present, within the DCO Site and relevant ZoI (see **Table 8-4**) alongside an evaluation and justification of each feature's importance / value (sensitivity).

8.6.17 The assessment of biodiversity importance of ecological features has been made for the entirety of the DCO Site, however where the biodiversity importance of a feature is specific to a particular area of the DCO Site (e.g., occurring within the Principal Site only), then this is specified with population size or specific species in **Table 8-11**.

Table 8-11: Summary of baseline details for legally protected, notable plant and animal species (including INNS), alongside an assessment of biodiversity importance of ecological features

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
Flora (see **Appendix 8-B: Terrestrial Habitats and Notable Flora**) of this ES [EN010154/APP/6.3])	**Desk Study:** Nine records of 'flowering plants' and one record of a fungus within 2km of the DCO Site and in the last ten years. The fungus is Sandy Stiltball *Battarrea phalloides* recorded from Bloxholm Woods approximately 2 km from the DCO Site. The remaining records related to the flowering plant Bluebell *Hyacinthoides non-scripta* recorded from Bloxholm Woods and other adjacent woodlands. **Field Survey:** Scarce arable flora survey results identify 23 scoring plant species occurring within arable fields across the DCO Site. Of these, the most notable scarce arable flora were those identified in the Great Britain and England vascular plant Red Data Lists (Ref 8-56) as follows: Common Cudweed *Filago germanica*; Corn Marigold *Glebionis segetum*; Corn Spurrey *Spergula arvensis*; Dwarf Spurge *Euphorbia exigua;* Narrow-fruited Cornsalad	Scarce arable flora species present within arable fields within the DCO Site.	Local to National (two fields County Importance and one field National Importance)	Desk study records all outside the DCO Site in woodland habitats not impacted. One field (AF29) with an assemblage of scarce arable flora species assessed as National importance, derived predominantly from the presence of populations of three Red Data List plant species (Corn Marigold, Dwarf Spurge and Stinking Chamomile); two fields were of County importance (AF17 and AF72); and the remaining fields with scarce arable flora present are assessed as Local importance. No other notable and/or protected flora species recorded in other habitats.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	Valerianella dentata; Night-flowering Catchfly *Silene noctiflora*; Rye Brome *Bromus secalinus*; and Stinking Chamomile *Anthemis cotula*.			
Aquatic macroinvertebrates (see **Appendix 8-C: Aquatic Ecology**) of this ES **[EN010154/APP/6.3]**)	**Desk Study**: There were no records of notable macroinvertebrate species identified within the Study Area between 2013 and 2023. Although protected and notable aquatic invertebrate records were absent from the Study Area, it should be noted that for the Witham – confluence with Cringle Brook to confluence with River Brant WFD Water Body (WFD: GB105030056780) and River Brant Lower Water Body (WFD: GB105030056770), aquatic invertebrates were classified as High status for macroinvertebrates. **Field Survey:** The field survey identified six locally or regionally notable species within an otherwise common macroinvertebrate assemblage. Vagrant Darter *Sympetrum vulgatum* was identified in a single watercourse within the DCO Site.	Macroinvertebrate assemblage of common species within the Principal Site.	Local	Macroinvertebrate assemblage of common species within the Principal Site. As Vagrant Darter is a vagrant species from Central Europe, it does not qualify for evaluation against IUCN red list criteria (Ref 8-30) and therefore it is also considered of Local conservation value.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
Aquatic macrophytes (see **Appendix 8-C: Aquatic Ecology**) of this ES **[EN010154/APP/6.3]**)	**Desk Study**: There were no records of notable aquatic macrophytes identified within the Study Area between 2013 and 2023. **Field Survey**: Opposite-leaved Pondweed *Groenlandia densa* is present in two drains within the DCO Site.	Opposite-leaved Pondweed was recorded through field surveys in two water bodies within the DCO Site.	Local	This threatened species has a Vulnerable status on the England Red List of vascular plants (Ref 8-56) but does not receive specific legal protection. In Lincolnshire, this species has a patchy distribution, where it is mostly found in smaller water bodies such as streams, canals, ditches and ponds (Ref 8-84).
Fish (desk study results included in **Appendix 8-C: Aquatic Ecology**) of this ES **[EN010154/APP/6.3]**)	**Desk Study:** Records of European Bullhead, European Eel in the River Witham from the preceding ten years. Older records of Spined Loach in the River Brant. **Field Survey**: None undertaken as desk study data was sufficient.	Presence of protected / notable fish potentially present in all watercourses within the DCO Site, due to their connectivity to the River Witham and River Brant.	County	Desk study data has identified the potential for European Eel (protected under the Eels (England and Wales) Regulations (Ref 8-14)), European Bullhead (a common and widespread species listed in Annex II (Ref 8-2)) and Spined Loach (listed in Annex II (Ref 8-2)) to be present. There is no spawning habitat within the DCO Site and population numbers (if present) are unlikely to be significant at proposed crossing points.
Terrestrial invertebrates (see **Appendix 8-D: Terrestrial Invertebrates**) of this ES **[EN010154/APP/6.3]**)	**Desk Study**: The data search returned six records of two species of butterfly: Purple Emperor *Apatura iris* and White-letter Hairstreak *Satyrium w-album*. No other records of legally	Based on the walkover survey, there are areas of potentially greater value to terrestrial invertebrate species	District	Habitat of potentially greater value to terrestrial invertebrates within the Principal Site and likely across the DCO Site, but no legally protected terrestrial invertebrate species recorded. Notable species could occur

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	protected or notable terrestrial invertebrates were identified. **Field Survey**: There is habitat within the Principal Site (including grassland, ditches, woodland and mature trees), amounting to <3% of the DCO Site, that is of potentially greater value to terrestrial invertebrates. However, during targeted sampling in March / April 2023, no legally protected terrestrial invertebrate species or SPI recorded. Two Nationally Scarce species of beetle, both associated with woody vegetation and dead wood, recorded within the DCO Site.	and assemblages within the Principal Site.		across the DCO Site in areas of retained habitats.
Great Crested Newt (see **Appendix 8-E: Great Crested Newt**) of this ES **[EN010154/APP/6.3]**)	**Desk Study**: Two records of Great Crested Newt presence within the Study Area and six records of confirmed absence. The closest negative eDNA record to the DCO Site (confirming Great Crested Newt absence) was from approximately 40m west of the DCO Site, in 2021. **Field Survey**: Of the suitable ponds within the ZoI that were surveyed for Great Crested Newt presence / absence (through eDNA), all were	None, Great Crested Newt absent	Great Crested Newt is absent from the DCO Site and a 250m buffer	Notwithstanding the International and National legislation that protects this species, Great Crested Newt is absent from the ZoI of the Proposed Development.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	confirmed as not supporting Great Crested Newt.			
Reptiles and Common Toad (see **Appendix 8-F: Reptiles and Common Toad**) of this ES **[EN010154/APP/6.3]**)	**Desk Study:** Three species of reptile (Grass Snake *Natrix helvetica*, Common Lizard *Zootoca vivipara* and Slow-worm *Anguis fragilis*) and Common Toad recorded within the Study Area. **Collaborative Dataset:** Common Toad identified as present in grassland margins at the proposed Navenby Substation site, within the Cable Corridor. **Field Survey**: Individual Grass Snakes recorded within three survey locations and Common Toad within two locations in the Principal Site.	Grass Snake	Local	Reptiles are protected from intentional injuring or killing under the WCA (Ref 8-1) and a SPI in England (Ref 8-9). An estimated low population of Grass Snake are present in three areas within the Principal Site.
		Common Toad	Local	Common Toad is a SPI in England (Ref 8-9). An estimated low population of this SPI, recorded in two areas within the Principal Site and one area within the Cable Corridor.
Breeding birds (see **Appendix 8-G: Breeding birds**) of this ES **[EN010154/APP/6.3]**)	**Desk Study:** The desk study identified records of 50 specially protected or notable species of bird. **Field Survey**: Surveys of breeding birds recorded 73 birds using the DCO Site and a breeding assemblage of 56 species, including SPI (Ref 8-9) such as Lapwing *Vanellus vanellus,* Skylark and Yellowhammer *Emberiza citrinella*.	Assemblage of breeding birds, including specially protected species (Ref 8-1) and SPI (Ref 8-9), within the DCO Site.	Species Diversity is of County importance	No species are present within the DCO Site in numbers of national significance, i.e., 1% or more of the UK population.
			Population of Lapwing and Skylark is of District importance	Population of Lapwing and Skylark is considered to be of District Importance.
			Territories of one specially protected species within the	Three species recorded within the Survey Area that are listed on

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
			Cable Corridor is of District importance Territories of two specially protected species within the Principal Site are of up to District importance.	Schedule 1 of the WCA, 1981 (as amended) (Ref 8-1).
Non-breeding birds (see **Appendix 8-H: Non-breeding Birds**) of this ES **[EN010154/APP/6.3]**).	**Desk Study:** The desk study identified records of 50 specially protected or notable species of bird. **Field Survey**: Surveys of non-breeding birds recorded 84 bird species, of which 77 species were utilising the DCO Site (i.e. using the habitat within or adjacent to the DCO Site for foraging or resting). An assemblage of non-breeding birds recorded within the DCO Site, includes SPI (Ref 8-9) (such as Skylark).	Assemblage of non-breeding birds within the DCO Site.	Species diversity is of County importance. Populations of farmland bird species (including Grey Partridge, Skylark, Linnet, Yellowhammer and Corn Bunting); and Whooper Swan are of District importance.	No non-breeding bird population approaches the 1% level of the national population, which would constitute a nationally significant non-breeding bird population. Ten species, listed in Annex I of the Birds Directive (Ref 8-2) were recorded within the Survey Area. Sixteen SPI (Ref 8-9) were recorded within the Survey Area. Twenty species, included on the Birds of Conservation Concern (BoCC) Red List (Ref 8-85) and 26 species, included on the BoCC Amber list (Ref 8-85), were recorded within the Survey Area.
Bats – roosts (see **Appendix 8-I: Bats**) of	**Desk Study:** The desk study identified 234 records of 11 bat	Evidence of roosts for all widespread	Bat roosts have been assigned of District	All bat species and their roosts are legally protected in the UK under the

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
this ES **[EN010154/APP/6.3]**)	species within the Study Area in the last ten years. Species comprise Brandt's bat *Myotis brandtii*, Common Pipistrelle *Pipistrellus pipistrellus*, Daubenton's bat *Myotis daubentonii*, Leisler's bat *Nyctalus leisleri*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Nathusius' Pipistrelle *Pipistrellus nathusii*, Natterer's bat *Myotis nattereri*, Barbastelle *Barbastella barbastellus*, Brown long-eared bat *Plecotus auritus*, Whiskered bat *Myotis mystacinus* and Noctule *Nyctalus noctula*. The data search included four confirmed roosts from within the DCO Site, of unknown Pipistrelle species (two records), an unknown bat species (one record) and of a Natterer's bat (one record). A review of MAGIC (Ref 8-48) identified Natural England licences that have been granted within the Study Area, but none from within the DCO Site. These comprise breeding and non-breeding roosts or undefined roosts of Common Pipistrelle and Brown long-eared Bat. Non-breeding roosts or undefined roosts of Soprano Pipistrelle and non-	species: Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared Bat and widespread in many geographies but not as abundant in all species: Daubenton's Bat, Natterer's Bat, Noctule, Whiskered Bat and Brandt's Bat. No evidence of roosts, but possibility of Rarer or restricted distribution species: Leisler's Bat, Nathusius' pipistrelle and Serotine One roost and likely to be others in suitable habitat of the Rarest species: Barbastelle	Importance for Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Leisler's Bat, Serotine and Brown Long-eared Bat and County Importance for Noctule, Daubenton's Bat, Natterer's Bat, Whiskered Bat, Brandt's Bat and Barbastelle.	WCA, 1981 (as amended) (Ref 8-1) and The Conservation of Habitats and Species Regulations 2017 (Ref 8-8), which implement the EC Directive 92/43/EEC (Ref 8-2). Seven bat species are also included as SPI (Ref 8-9). All roosts and potential roost features identified are outside the current footprint of the Proposed Development (due to avoidance of potential roosting features). As such no detailed roost presence/absence or characterisation has been undertaken to determine roost importance and therefore an estimated biodiversity importance to individual species has been assigned based on desk study data and activity surveys. Some of the features identified, particularly in individual mature trees may contain roosting bats, however none of the features identified are currently anticipated to be directly or indirectly impacted by the Proposed Development due to retention of these features, and buffers around them. As secured in the **Framework CEMP [EN010154/APP/7.7]** pre-construction

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	breeding roosts of Natterer's Bat and Barbastelle. **Collaborative Dataset**: Trees with potential to support bat roosts were identified and included in the totals below. **Field Survey**: The DBW identified 453 individual trees, groups/lines of trees or woodland within the Survey Area with roost suitability (PRF) or require further assessment (FAR) (only if impacts are likely). These trees mostly form tree lines or are within hedgerows along field boundaries. There were three buildings/structures with roost suitability (Low to Moderate) within the Survey Area. Based on the field data collected from the bat activity surveys, there may be roosts of any of the species recorded either within or close to the DCO Site of Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Noctule, Leisler's Bat, Daubenton's Bat, Natterer's Bat, unknown Myotis species (either Daubenton's Bat, Natterer's Bat or potentially another species), Serotine, Barbastelle and			(ground-level inspection) surveys will be undertaken to support the baseline survey findings, the purpose of which is to ensure mitigation during the construction phase is based on the latest protected species information and Proposed Development design. Should there have been any changes to the design which could impact upon roosting bats (i.e. additional tree removal of trees with potential to support roosting bats), where found within the DCO Site, then further surveys will be undertaken as required (e.g. bat emergence surveys), then Natural England licences will be sought (if required) and mitigation measures updated accordingly.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	Brown Long-eared Bat. This is based on suitable habitat features such as suitable trees and buildings for roosting and the timing of observations in relation to expected emergence times (from static and transect data). Woodland within the DCO Site or immediately adjacent (e.g. Tunman Wood, Housham Wood, Stocking Wood, High Walks Wood) are highly likely to contain bat roosts, based observations during the transect and static surveys, with potential roosts for species such as Barbastelle, Soprano Pipistrelle, Brown Long-eared Bat, Noctule, Leisler's Bat and Myotis species.			
Bats – commuting / foraging (see **Appendix 8-I: Bats**) of this ES **[EN010154/APP/6.3]**)	**Desk Study:** The data search returned 234 records of 11 bat species (roosting or activity records or not specified) occurring within the Study Area in the last ten years, including: Brandt's Bat, Brown Long-eared Bat, Common Pipistrelle, Daubenton's Bat, Leisler's bat, Nathusius' Pipistrelle, Natterer's Bat, Noctule Bat, Soprano Pipistrelle, Barbastelle and Whiskered Bat. Within the DCO Site, the species that	There is foraging and commuting activity by diverse assemblage of bats with high reliance on habitats by Common and Soprano Pipistrelle and as demonstrated by regular use by larger numbers of bats; moderate reliance	The mosaic of habitats within the DCO Site is considered to be of County Importance to foraging and commuting bats. However, the area to be developed comprises largely arable areas which are of lower value	All bat species and their roosts are legally protected in the UK under the WCA, 1981 (as amended) (Ref 8-1) and The Conservation of Habitats and Species Regulations 2017 (Ref 8-8), which implement the EC Directive 92/43/EEC (Ref 8-2). Seven bat species are also included as SPI (Ref 8-9). Biodiversity importance of foraging and commuting bats is based on species rarity, numbers, presence of

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	have been recorded include Soprano Pipistrelle, Brown Long-eared Bat and an unknown Pipistrelle bat species. Most of these were field observations, and where roosting was not specified could be either roosting or foraging/commuting records. **Collaborative Dataset:** Bat activity and static detector surveys during summer and autumn 2024 recorded activity of eight species: Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Noctule, Barbastelle, Brown Long-eared Bat, Serotine and a Myotis species. **Field Survey:** Species recorded on the activity surveys (combined activity transects and static bat detectors) in 2023 and 2024 comprised at least ten species comprising; Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Noctule, Leisler's Bat, Daubenton's Bat, Natterer's Bat, unknown Myotis species (either Daubenton's Bat, Natterer's Bat or potentially another species), Serotine, Barbastelle and Brown Long-eared Bat.	on habitats by Nathusius Pipistrelle, Myotis species (aggregated to include Daubenton's Bat, Natterer's Bat, and potentially other unknown species), Noctule and Leisler's Bat as showed by regular use by smaller numbers of bats; and low reliance on habitats by all other species, Serotine, Barbastelle and Brown Long-eared Bat as demonstrated by limited evidence or irregular use and generally by small numbers of bats.	and considered to be up to District Importance.	potential nearby roosts and type / complexity of commuting / foraging features and reliance on these habitats. This also considers the lower detectability on bat detectors of species such as Brown Long-eared Bat and *Myotis* bats compared to species such as Common and Soprano Pipistrelle and Noctule (Ref 8-86). The surveys identified a range of activity (including foraging, commuting and social calling) with multiple bats of one or more species often recorded simultaneously, with areas such as woodland edges, field boundary habitats with hedges and trees and within close proximity to water. The highest bat activity was recorded during favourable weather conditions when insect prey is most abundance, usually in the spring and summer and is of up to District importance within the developable areas of the Proposed Development.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
Riparian mammals (see **Appendix 8-J: Riparian Mammals**) of this ES **[EN010154/APP/6.3]**)	**Desk Study**: The data search returned records of Water Vole and Otter within the Study Area, with the majority of records for both species related to Whisby Pits, located approximately 410m to the north of the DCO Site. There were two Otter records from within the DCO Site, along the River Witham near Bassingham. There were no records of Water Vole within the DCO Site. **Field Survey**: Four watercourses (River Brant, West Brant Syke, the River Witham and Wet Drain 18) and one water body were scoped in for detailed riparian mammal surveys during the HSA, to determine presence, or absence of either Water Vole or Otter. Riparian mammal surveys identified evidence of Otter on the River Brant and the River Witham. Evidence of Water Vole was found along a section of the River Witham in the south of the DCO Site, near to Bassingham. There was no evidence of American Mink found anywhere within the DCO Site.	Presence of Otter along the River Brant and River Witham.	District	Otter is protected under various legislation in the UK (Ref 8-1, Ref 8-8). Otters have an estimated British population of 11,000, are increasing in population size and range (Ref 8-86) and can be found throughout Lincolnshire (Ref 8-88). They are of International Union for the Conservation of Nature (IUCN) Least Concern status in England (Ref 8-30). The activity levels along the River Witham means the DCO Site is likely to support an Otter population of District Importance.
		Presence of Water Vole along the eastern edge of the Principal Site on the River Witham	District	Water Vole are protected under Schedule 5 of the WCA, 1981 (Ref 8-1). Water Vole have an estimated British population of 132,000 but are decreasing in population size and range and are considered Endangered in England (Ref 8-89). The limited number of records of Water Vole, suitable habitat and absence of Mink, which predate Water Vole, means the DCO Site is likely to support a population of District importance, in consideration of this species' declining status in a national and county context.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
Badger (see **Appendix 8-K: Badger**) of this ES **[EN010154/APP/6.3]**)	**Desk Study**: The data search returned records of Badger, including setts, occurring within the Study Area and within the last ten years. **Field Survey / Collaborative Dataset**: The DCO Site supports areas of woodland, grassland, scrub, hedgerows, and ponds which provide suitable commuting, foraging and watering habitat for Badger and evidence of this species was recorded within the DCO Site.	Presence of this species within or in the vicinity of the DCO Site.	Local	Protected under the Protection of Badgers Act 1992 (Ref 8-10). However, they remain common and widespread both nationally and in Lincolnshire (Ref 8-88).
Brown Hare	**Desk Study**: The data search did not return any records of Brown Hare within the Study Area and occurring within the last ten years. **Field Survey**: This species has been recorded within the DCO Site during ecological surveys.	Presence of this species within the DCO Site.	Local	SPI in England (Ref 8-9) and local BAP species in Lincolnshire (Ref 8-36). Brown Hare has been recorded in arable land during ecological surveys undertaken within the DCO Site.
Hedgehog	**Desk Study**: The data search did not return any records of Hedgehog within the Study Area and occurring within the last ten years. **Collaborative Dataset**: This species was recorded in grassland margins at the proposed National Grid substation near Navenby site, within the Cable Corridor and hedgerows,	Presence within the Cable Corridor and assumed across the DCO Site.	Local	SPI in England (Ref 8-9) and Local BAP species in Lincolnshire (Ref 8-36) and likely to occur in hedgerows, woodland and scrub habitat across the DCO Site.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	woodland and scrub habitat throughout the DCO Site could support this species.			
Other SPI mammals	**Desk Study**: The data search did not return any records of other mammals that are listed as SPI (Ref 8-9). **Field Survey**: No other SPI mammals have been recorded within the DCO Site, however, the habitat within the DCO Site has the potential to support Harvest Mouse.	Possible presence of Harvest Mouse	Local	Polecat and Harvest Mouse are SPI under Section 41 of the NERC Act (Ref 8-9). Polecat is a rare species outside of its known distribution range (Ref 8-88) and historical records of Polecat show a widespread but scarce distribution in the northern half of Lincolnshire (Ref 8-88). Therefore, given the paucity of records of this species within the Study Area and this species' rarity within Lincolnshire, Polecat is likely to be absent from the DCO Site. Harvest Mouse, although not recorded within the Study Area during the desk study, is likely to be a widespread (but under-recorded) species within Lincolnshire, based on its known (or likely) distribution in Lincolnshire (Ref 8-88). Furthermore, the DCO Site does offer suitable habitat for this species, which can be found in tall grassland, farmland and hedgerows.
Invasive non-native species (INNS)	**Desk Study**: Two invasive non-native species of macroinvertebrate found	Presence of INNS macrophytes and	Not applicable	Nuttall's Waterweed is listed in Schedule 9 of the WCA (Ref 8-1) and

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
(desk study and field survey results presented here and aquatic INNS included in **Appendix 8-C: Aquatic Ecology** of this ES [**EN010154/APP/6.3**])	outside (<1km) of the DCO Site and downstream of it, these being: Mud-snail *Potamopyrgus antipodarum* and Northern River Cragonyctid *Crangonyx pseudogracilis* / Florida Crangonyctid *Crangonyx floridanus*. Two invasive non-native plant species found outside of the DCO Site (<1km) and downstream of it, these being: Nuttall's Waterweed *Elodea nuttallii* and Canadian Waterweed *Elodea canadensis*. Six records of Feral Ferret *Mustela putorius* were returned within the Study Area, the closest of which was approximately 300m from the DCO Site, with another record returned from the A15, which runs immediately adjacent to the DCO Site (although there is no exact location given for this record). **Field Surveys**: Canadian Pondweed and Nuttall's Waterweed were recorded within the Principal Site. Non-native (but not statutory INNS) macroinvertebrates were also recorded in most water bodies.	macroinvertebrates in water bodies.		in the Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 8-4). These legislations make it an offence to plant or otherwise cause to grow (including allowing to spread) listed plant species in the wild. Mitigation including biosecurity measures will need to be implemented during construction (as included in the **Framework CEMP [EN010154/APP/7.7]**) in areas where these species may be present to prevent their spread, which would constitute an offence under the associated legislation.

Ecological feature and relevant technical appendix	Baseline detail	IEFs identified	Biodiversity importance	Supporting notes
	Mink was absent from the DCO Site and no other INNS animal species have been recorded.			

8.7 Summary of Important Ecological Features

8.7.1 **Table 8-12** summarises the known IEFs that are relevant to the Proposed Development, based on desk study data, survey data and any relevant collaborative datasets collected between January 2023 and May 2025. Based on CIEEM guidelines (Ref 8-23) and using professional judgement, features of less than Local importance (i.e. of Site importance), are not considered further in the assessment process, unless legislation requires their consideration.

Table 8-12: Summary of Important Ecological Features (IEFs)

IEF	Geographic Importance (see Table 8-5~~Table 8-5~~)	Reason for valuation of IEFs
Whisby Nature Park LNR	National	Statutorily designated site for its nature conservation value and therefore qualifies as **High** importance.
Swanholme Lakes LNR / SSSI	National	Statutorily designated for its nature conservation value and therefore qualifies as **High** importance.
29 sites of county importance (LWSs – see **Table 8-9**)	County	Non-statutorily designated sites of nature conservation value, qualifying as **Medium** importance.
Habitat – broadleaved woodland (semi-natural)	District	Habitat of ecological importance, supporting a wide range of fauna and included as a HaPI, although small extent within the DCO Site, qualifying as being of **Medium** importance.
Habitat – veteran / ancient trees	High	Ancient and veteran trees are notable for their potential biodiversity value and are an irreplaceable habitat (Ref 8-90). Therefore, this habitat qualifies as being of **High** importance.
Woodland and forest – other woodland, mixed	Local	Small extent, mainly plantation woodland of young age but providing habitat for species of birds and bats, qualifying as being of **Low** importance.
Heathland and shrub - Mixed scrub / willow scrub	Local	Small extent, adds to the local habitat resource and provides habitat for pollinators and nesting birds, qualifying as being of **Low** importance.
Habitat – *Arrhenatherum* neutral grassland within the Cable Corridor	County (only where this habitat has been identified as Coastal and Floodplain Grazing Marsh, see **Figure 8-4: Habitat**	Coastal and Floodplain Grazing Marsh associated with the River Witham, Aubourn to Beckingham LWS qualifies as a habitat of ecological importance included as a HaPI and LBAP habitat. Therefore, this habitat qualifies as being of **Medium** importance.

IEF	Geographic Importance (see Table 8-5~~Table 8-5~~)	Reason for valuation of IEFs
	Map (drawn to UKHab) of this ES **[EN010154/APP/6.2]**.	
Habitat - *Deschampsia* neutral grassland	Local	Small extent within the DCO Site, qualifying as being of **Low** importance.
Grassland - Other calcareous grassland	Local	Small extent, in poor condition, however a scarce resource locally with potential for enhancement, qualifying as being of **Low** importance.
Grassland – Scattered scrub	Local	Small extent, adds to the local habitat resource and provides habitat for pollinators and nesting birds, qualifying as being of **Low** importance.
Habitat – Wetland - other wetlands, swamp	District	HaPI and LBAP habitat, but very small extent within the DCO Site. Therefore, this habitat qualifies as being of **Medium** importance.
Habitat - Other standing water - Pond (non-priority)	Local	Non-priority ponds, potentially of importance to fauna in the local area only and qualifies as **Low** importance.
Habitat – Main Rivers (including Ditches)	Up to County	River Witham and the River Brant both qualify as **Medium** importance.
Habitat – Cropland – arable field margins (including Flora species)	Up to National	One field was assessed as National importance, derived predominantly from the presence of populations of three Red Data List plant species, two fields of County importance; and the remaining fields with scarce arable flora present of Local importance. Therefore, arable field margins have been collectively assessed as being of up to **High** importance.
Habitat – Cropland – arable fields with pollen and nectar and, or, wild bird mix	Up to District	Not a HaPI, but similar biodiversity value to Arable field margins that are a HaPI and LBAP habitat and therefore qualify as being of up to **Medium** importance.
Habitat – hedgerows	County	The network of hedgerows across the DCO Site are of value to birds, bats and other fauna, therefore hedgerows qualify as being of **Medium** importance.
Aquatic macroinvertebrates	Local	Assemblage of common aquatic macroinvertebrates and species qualifies as being of **Low** importance.

IEF	Geographic Importance (see Table 8-5~~Table 8-5~~)	Reason for valuation of IEFs
Aquatic macrophytes – Opposite-leaved Pondweed	Local	Opposite-leaved Pondweed does not receive legal protection but does have patchy distribution in Lincolnshire and therefore qualifies as being of **Low** importance.
Fish	County	European Eel, Spined Loach and European Bullhead are all protected, but are relatively widespread in central and eastern England and therefore these species would qualify as being of **Medium** importance.
Terrestrial invertebrates	District	No legally protected terrestrial invertebrate species or SPI recorded, but areas of habitat (amounting to <3% of the potential developable area of the Principal Site) that qualify as being of potentially greater value to terrestrial invertebrates. Therefore, qualifies as being of **Medium** importance.
Grass Snake	Local	Presence of a low population of Grass Snake in three areas in the Principal Site. Therefore, qualifies as being of **Low** importance.
Common Toad	Local	Presence of a low population of Common Toad in two areas in the Principal Site and a single area within the Cable Corridor. Therefore, qualifies as being of **Low** importance.
Breeding birds (general breeding bird assemblage – species diversity)	County	Species diversity of common and notable breeding bird species, is of County importance and therefore qualifies as being of **Medium** importance.
Breeding birds – territories of Lapwing and Skylark within the DCO Site	District	Population of Lapwing and Skylark within the DCO Site qualifies as being of **Medium** importance.
Breeding birds – territories of specially protected species within the DCO Site	Up to County	Population of one species included on Schedule 1 of the Wildlife and Countryside Act, 1981 (Ref 8-1) qualifies as being of **Low** importance. However, population of two species is of **Medium** importance.
Non-breeding birds	Up to County	Species diversity and populations of non-breeding farmland bird species within the DCO Site, as well as population of Whooper Swan within the Survey Area qualifies as being of **Medium** importance.
Bats – roosts	Up to County	Potential for bat roosts within and close to the DCO Site, based on desk study, activity

IEF	Geographic Importance (see Table 8-5~~Table 8-5~~)	Reason for valuation of IEFs
		surveys and roost features. Roosts qualify as being of **Medium** importance (depending on the species).
Bats – commuting / foraging	District	The biodiversity importance of commuting and foraging habitat for bats is based on species rarity, habitat types / features, habitat reliance and roost types. Based on this, the commuting / foraging habitat within the developable areas of the Proposed Development would qualify as being of **Medium** importance.
Otter	District	Presence of Otter on the River Witham and River Brant would qualify as being of **Medium** importance as this species is increasing in Lincolnshire, but is localised within the DCO Site.
Water Vole	District	Presence of this species in the River Witham, on the boundary of the Principal Site, qualifies as being of **Medium** importance due to localised population recorded and in consideration of National and County declines of this species.
Badger	Local	Badgers occurring within the DCO Site are of **Low** importance as this species is common and widespread throughout Lincolnshire.
Other mammals (Brown Hare, Hedgehog and Harvest Mouse)	Local	Presence of Brown Hare and Hedgehog confirmed within the DCO Site and presence likely for Harvest Mouse, with all species qualifying as being of **Low** Importance as these species are common and widespread throughout Lincolnshire.
INNS	Not applicable, but included due to legislation covering INNS.	There are statutory constraints regarding the potential spread of INNS, as presented in **Appendix 8-A: Ecology Legislation, Planning Policy Context and Guidance** of this ES **[EN010154/APP/6.3]**.

8.8 Future Baseline

8.8.1 The future baseline (i.e. no development) scenarios are set out in **Chapter 5: EIA Methodology** of this ES **[EN010154/APP/6.1]**. However, this section considers those changes to the ecological baseline conditions, described above, that might occur in the absence of the Proposed Development and during the time period over which the Proposed Development would be in place (60 years).

No Development

8.8.2 In the short to medium term, in the absence of the Proposed Development, habitats within the DCO Site (such as arable fields (cropped on rotation), mature trees, hedgerows, ponds and woodland) have and will continue to provide a number of species with potential habitat for foraging and reproduction, such as arable farmland for ground-nesting breeding birds. In the long term, in the absence of the Proposed Development, habitats within the Principal Site will be under agricultural management and therefore the concerningly low biodiversity of this landscape and the damaged soil, poor water quality and artificially low water tables will remain, making recovery of these ecosystems harder to achieve. The distribution of some species will change in response to changes in crop type, whilst the assemblages are likely to remain broadly the same. Any changes to the baseline between now and the future scenario have been taken into account in this assessment and when determining likely mitigation measures.

8.8.3 Irrespective of whether the Proposed Development were to proceed or not, the current national, regional and local trend is for a decline in species diversity and abundance e.g., farmland birds. These declines are likely to continue in the landscape surrounding the Proposed Development throughout its duration.

Construction Period (anticipated to be 2031-2033)

8.8.4 Based on current trends, in the absence of the Proposed Development, species abundance and diversity are likely to remain similar to the existing baseline conditions during the construction period, although the trajectory for the majority of species, based on population estimates and IUCN data (Ref 8-30), is continued decline.

8.8.5 If the Proposed Development did not proceed, the majority of existing habitats are likely to continue being present, although some changes in habitat extent, composition and structure will occur as a result of ecological succession e.g., the gradual establishment of tree and shrub seedlings within woodland areas and along hedgerows. These resultant gradual changes in habitat composition are unlikely to materially alter the ecological baseline and therefore the habitats and species present are very unlikely to undergo significant change prior to 2031 and up to 2033.

Opening and Operation (assumed to be 2033-2093)

8.8.6 Based on current projections, the long-term i.e., the next 60 years, will see extreme weather conditions due to climate change (see **Chapter 6: Climate Change** of this ES **[EN010154/APP/6.1]**) to which the arable landscape has low resilience. For example, heavy and prolonged rainfall would exacerbate loss of soil and sedimentation of ditches, drains and rivers. There would be a continued decline in biodiversity, including species associated with the baseline conditions present within the DCO Site.

8.8.7 National and local planning policy targeted at halting and reversing these declines is presented in **Appendix 8-A: Ecology Legislation, Planning Policy Context and Guidance** of this ES **[EN010154/APP/6.3]**.

8.8.8 If the Proposed Development did not progress, based on available information, whilst there is likely to be an overall decline in biodiversity, there are no reasons to expect that there would be any marked change in the broad habitat types within the DCO Site between opening in 2033 and decommissioning in 2093 (based on an estimated 60-year operation). Habitats such as broad-leaved trees and scrub will be more mature but are likely to support a broadly similar species assemblage and arable farmland will also be managed accordingly, maintaining broadly similar species assemblages.

Decommissioning (assumed to be from 2093)

8.8.9 The future baseline conditions in 2093 are currently unknown and more difficult to predict given the time period that would need to lapse between now and then. Habitats such as plantation woodland would have matured, though some may have been felled or partially cropped. Species assemblages are also likely to have changed in accordance with the site conditions, with changes in biodiversity likely to occur if climate change continues at its current pace. Effects could include changes in species habitats and compositions and consequently changes in species assemblages and distribution.

8.9 Potential Impacts

8.9.1 Prior to the implementation of any mitigation, the Proposed Development has the potential to affect biodiversity (positively or negatively) during the construction, operational and decommissioning phases in the following ways:

Construction (anticipated to be 2031-2033)

8.9.2 Impacts on biodiversity features during construction of the Proposed Development are likely to include:

a. Habitat loss– direct impacts associated with changes in land use resulting from the Proposed Development, for example temporary works associated with site clearance, and permanent land-take (mainly arable land) associated with the installation of the Proposed Development;

b. Fragmentation of populations or habitats – indirect impacts due to the Proposed Development dividing a habitat, group of related habitats, site or ecological network, or the creation of partial or complete barriers (e.g. culverts) to the movement of species, with a consequent impairment of ecological function;

c. Disturbance – indirect impacts resulting from a change in normal conditions (e.g., light, noise, vibration and human activity) that result in individuals or populations of species changing behaviour or range;

d. Habitat degradation – direct or indirect impacts resulting in the reduction in the condition of a habitat and its suitability for some or all of the species it supports, for example changes in chemical water quality, increased

sedimentation and dust deposition, or changes in surface flow or groundwater;

e. Species mortality – direct impacts on species populations associated with mortalities due to construction activities, for example site clearance; and

f. Introduction and, or, spread of invasive species, due to the movement of personnel, equipment and plant machinery, potentially facilitating the introduction of invasive species.

Operation (assumed to be 2033-2093)

8.9.3 Impacts on biodiversity features during operation of the Proposed Development are likely to include:

Adverse impacts:

a. Potential avoidance by species using the DCO Site, such as bats and birds, due to indirect impacts through, for example, operational lighting;

b. Disturbance of sensitive species during operational maintenance activities; and

c. Fragmentation of habitats causing a barrier effect e.g., due to fencing.

Beneficial impacts:

a. Increases in invertebrate assemblages and abundance;

b. Increased connectivity across the DCO Site and into the wider area, through planting of trees and hedgerows;

c. Potential contribution to nature recovery in Lincolnshire;

d. Undeveloped fields and margins that provide permanent (and undisturbed) nesting and foraging habitats for farmland birds, small mammals and reptiles;

e. Potential attraction and increases in species foraging around the DCO Site, such as bats and birds, from increases in prey items (i.e., flying insects);

f. Potential increases in abundance and distribution of species, due to lack of human disturbance and changes in habitat (such as agricultural practices) within the DCO Site; and

g. Indirect beneficial impacts through a possible reduction of agricultural chemical inputs to watercourses / reduction in pesticide use on crops within the local area resulting in an increase in invertebrate abundance and diversity.

Decommissioning (assumed to be from 2093)

8.9.4 Field surveys would be required in advance of decommissioning to define the ecological baseline at the time of decommissioning and to ensure that impacts on ecological features are identified, avoided and, or, mitigated. Upon decommissioning, the above-ground physical infrastructure will be removed

and the DCO Site returned to landowners in the condition as at the end of operation, including the established habitats.

8.10 Embedded Mitigation Measures

8.10.1 This section describes the avoidance, and embedded mitigation measures relevant to biodiversity that are already incorporated into the Proposed Development design, as described in **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]** and management plans submitted with this DCO Application.

8.10.2 Embedded avoidance and mitigation measures are incorporated into the Proposed Development, in line with national and local planning policy (as presented in **Appendix 8-A: Ecology Legislation, Planning Policy Context and Guidance** of this ES **[EN010154/APP/6.3]**). As a first principle, the Proposed Development has sought to avoid IEFs and where this has not been practicable, then embedded mitigation measures have been added to form an integral, committed and deliverable part of the Proposed Development design that does not compromise standard construction practices. Their delivery is secured by commitments in the form of DCO Requirements to deliver the **Framework CEMP [EN010154/APP/7.7]**, **Framework OEMP [EN010154/APP/7.8], Framework DEMP [EN010154/APP/7.9]** and **Framework LEMP [EN010154/APP/7.15]** and are therefore factored into the determination of significant effects.

8.10.3 The proposed planting design is shown in **Figure 7.15-1: Landscape Mitigation Plan** within the **Framework LEMP [EN010154/APP/7.15].** Based on the indicative layout of the Principal Site, new planting would include, in addition to hedgerow enhancement, gapping up and infill planting, and grassland under the panels and along perimeter buffers:

a. Approximately 16km of new native hedgerows;

b. Over 200 new trees;

c. Approximately 20ha of species rich grassland (outside of Solar PV areas);

d. Approximately 83ha of permanent grassland for bird mitigation purposes; and

e. Approximately 1.8ha of community orchard[1].

Proposed Development Design and Construction

8.10.4 Details of how the embedded avoidance and construction-related mitigation measures interact with IEFs are presented in **Table 8-13**. This embedded mitigation is needed to successfully integrate the Proposed Development within the context of the existing landscape and prevent or reduce any adverse effects on ecological features.

[1] The purpose of the community orchard is for use by local residents and the community to enable open access to the area, enjoyment of the space and to allow residents and the community to pick fruit from the trees grown within this orchard.

8.10.5 Embedded measures are taken into account prior to the assessment of effects in order to avoid considering assessment scenarios that are unrealistic in practice i.e. effects do not take account of measures even though they are likely to be standard practice and/ or form part of the Proposed Development design. These have been followed through into the assessment to ensure that realistic likely environmental effects have been identified.

8.10.6 Through the evolution of the design of the Proposed Development, including mitigation requirements for other environmental disciplines, undeveloped areas, comprising permanent grassland and managed arable farmland have been incorporated into the DCO Site to offset the impact of reversible long-term loss of arable farmland for ground nesting birds (see also section 8.12 of this Chapter), as well as providing extensive benefits for other IEFs and wider biodiversity. The locations of these areas are illustrated in **Figure 8-5: Bird Mitigation Land Allocation** of this ES **[EN010154/APP/6.2]**.

8.10.7 The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention and the implementation of such measures is secured by a Requirement in Schedule 2 of the DCO that the detailed CEMP is prepared in substantial accordance with the **Framework CEMP** and then the measures contained therein are implemented. Accordingly, the **Framework CEMP [EN010154/APP/7.7]** details the measures required that will mitigate any construction related effects on habitats (and species using them), including those associated with dust deposition, changes in air pollution and air quality and lighting. Furthermore, the **Framework CEMP [EN010154/APP/7.7]** specifies requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel), to prevent them reaching standing and running waters through flood events during construction and to prevent the runoff of sediment and pollutants to standing water (and Swamp) (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**). These measures are relevant to all IEFs during construction, however where additional measures have been included specific to an IEF, then these are specified in **Table 8-13**.

Table 8-13: Summary of embedded avoidance and mitigation measures

IEF	Embedded avoidance and mitigation measures
Designated Sites – Whisby Nature Park LNR and Swanholme Lakes LNR / SSSI	**Proposed Development design**: Whisby Nature Park LNR is approximately 410m north of the DCO Site and Swanholme Lakes LNR / SSSI is approximately 4km north east of the DCO Site. The Proposed Development avoids direct impacts to both of these statutorily designated sites as they are outside of the DCO Site. **Construction:** As set out within the Framework Construction Traffic Management Plan (Framework CTMP) **[EN010154/APP/7.18]**, there are no routes for construction traffic that pass within 200m of the Swanholme Lakes SSSI, thus avoiding any potential degradation to sensitive habitats from vehicle pollutants. Whilst there are no direct ecological or hydrological connections between designated sites and the DCO Site, the **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention and the requirement for the safe storage of chemicals / other hazardous materials (e.g., fuel), to prevent them reaching standing and running waters through flood events during construction.
Designated sites – River Witham, Aubourn to Beckingham LWS	**Proposed Development design**: The Proposed Development has been designed to ensure that the River Witham is crossed using trenchless methods (e.g. Horizontal Directional Drilling (HDD)), which includes launch and exit pits outside of the LWS and at least 10m distance from the top of the watercourses to protect the riparian habitats within the LWS, where the Interconnecting Cable Corridor is proposed. Furthermore, there will be no access across the River Witham during construction and no access tracks proposed and no construction compounds within the vicinity of the LWS. The section of the LWS adjacent to the southern end of the Principal Site will also be suitably buffered with undeveloped areas of at least 10m from the bank-top of the River Witham to protect riparian habitats and any species that may use it (e.g. riparian mammals), as per the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. These standard environmental protection measures will also prevent the runoff of sediment and pollutants to running water, as detailed in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**. Additionally, to minimise impacts to this LWS: • A security perimeter fence will be implemented early in the construction phase to secure the Principal Site and prevent construction activity from intruding into the LWS. The fence design will include gaps to allow mammals, including small deer, Badger, Brown Hare and Hedgehog, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these mammal passes will be determined following pre-commencement surveys.

IEF	Embedded avoidance and mitigation measures
	• Any access that is required for construction of the connecting corridor will utilise existing access points either side of the LWS, such as those already used by agricultural machinery. Vegetation clearance in these areas will also be minimised as much as is practicable. • The laying of cabling will be undertaken using non-intrusive methods, with launch and exit pits outside of the LWS (and the Coastal and Floodplain Grazing Marsh, HaPI) to protect habitats. This will mitigate for potential hazards such as chemical and soil spills, thus avoiding potential direct impacts to the LWS. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may impact habitats and disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.
Designated sites – Navenby, Green Man Road Verges LWS	**Proposed Development design**: The Proposed Development has to unavoidably cross this LWS to facilitate the Cable Corridor. Laying of cabling will be required within this LWS, along a working area of approximately 30m. However, the Proposed Development has been designed to minimise impacts on this LWS as much as is practicable, as secured by the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, to minimise impacts to this LWS: • To limit disturbance to habitat inside the LWS during construction, the working area will be kept to a minimum and no spoil, materials or vehicles will be stored within the LWS. • Vegetation clearance in these areas will be minimised as much as is practicable to facilitate the construction access track into the fields along Green Man Road. Post-construction habitat reinstatement will be undertaken soon after construction. This will comprise removing the soil and storing this, before re-instating this on completion of the cabling works, with re-seeding using locally sourced seed where practicable (potentially collected from other nearby higher quality calcareous grassland).

IEF	Embedded avoidance and mitigation measures
	• A security perimeter fence will be implemented early in the construction phase to prevent construction activity from intruding into the remainder of the LWS, which will prevent parking and driving on road verges. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES [**EN010154/APP/6.1**], particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats (including this LWS) which may impact habitats and disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage. • The following pollution prevention measures will also be implemented, as included in the **Framework CEMP [EN010154/APP/7.7]**: • Vehicles/plant will be cleaned away from the water in dedicated vehicle washing areas to prevent potential pollutants entering the DCO Site (and in particular the LWS). Wheel washes will reduce the trafficking of soil onto adjacent highways, with prompt clearance as a remedial action; • The control of the spread of dust and sediment through fine water spraying of vehicle routes; • On-site plant will be regularly serviced, monitored and inspected for leaks to prevent construction spillages and to ensure pollutants do not enter any waterways/spill onto adjacent habitats. Plant and machinery will be refuelled in dedicated refuelling areas, with drip-trays used routinely and spill kits available; and • Measures to reduce vehicle and mechanical plant noise (as required based on existing noise levels), including plant and machinery to be turned off when not in use.
Designated sites – 27 non-statutorily designated sites	**Proposed Development design**: There are 27 non-statutorily designated sites that are outside of the DCO Site (including Tunman Wood LWS (including Stocking Wood) and Tunman Wood North LWS and Navenby Heath Road Verges LWS which are adjacent to the DCO Site), and the Proposed Development has been designed to avoid impacts on these sites, e.g. now excluding Stocking Wood from the DCO Site.

IEF	Embedded avoidance and mitigation measures
outside of the DCO Site	**Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, to ensure impacts to these LWS's does not occur. • A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats outside of the DCO Site. • Any access that is required for construction will utilise existing access points, such as those already used by agricultural machinery and will not intrude into any LWS outside of the DCO Site. • Construction compounds will be setback from any LWS that is adjacent to the DCO Site, with set-backs applicable to habitats within LWS, e.g. 15m set-back from woodland habitats (Tunman Wood LWS (including Stocking Wood) and Tunman Wood North LWS) and a 10m set-back from Navenby Heath Road Verges LWS. Security fencing will be implemented at an early stage to ensure incursion into LWS's does not occur. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats (including adjacent LWS's) which may impact habitats and disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.
Habitat – woodland (including Ancient Woodland); and individual trees (including ancient / veteran trees).	**Proposed Development design**: The DCO Site was refined to exclude significant areas of broad-leaved woodland, such as Stocking Wood, which is now outside of the DCO Site. In line with the **Figure 7.15-1: Landscape Mitigation Plan** (presented within the **Framework Landscape and Ecological Management Plan [EN010154/APP/7.15]**), the Proposed Development design includes undeveloped areas of at least 15m between woodlands, and appropriate buffers between veteran or ancient trees (based on tree root protection areas) and the Proposed Development, thereby avoiding any direct impact on these habitat types. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, to minimise impacts to these habitats: • Woodland and retained trees will be protected, in line with British Standard Recommendations (Ref 8-90) with undeveloped buffers of at least 15m from the boundary of woodlands and buffers concordant with the requirements for each individual tree, (based on their root protection areas) both within and outside the DCO Site. These areas will be protected by clearly defined

IEF	Embedded avoidance and mitigation measures
	root protection areas to prevent damage/compaction of roots by plant and other machinery and prevent direct or indirect impacts to trees. Within some of these buffers, natural regeneration of woodland will create additional scrub and woodland habitat. • A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. The fence design will include gaps to allow mammals, including small deer, Badger, Brown Hare and Hedgehog, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these mammal passes will be determined following pre-commencement surveys. • Should the detailed design route any cables through trees or woodland that are being retained, they will installed via HDD at least 2m beneath the ground surface in order to protect the tree roots.
Habitat – *Arrhenatherum* and *Deschampsia* neutral grassland within the Cable Corridor – Coastal and Floodplain Grazing Marsh	**Proposed Development design**: There will be no Solar PV Arrays within this habitat, however, this habitat is within the Interconnecting Cable Corridor of the Principal Site, which is located to the west of the River Witham (as presented in **Figure 8-3: Location of Ancient Woodland and Priority Habitats identified during the desk study**). The Proposed Development has to unavoidably cross this habitat to the west of the River Witham, but has been designed to minimise direct loss of habitat through use of non-intrusive crossing methods to cross the River Witham and locating launch and exit pits outside of this habitat, as secured by the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, to minimise impacts to this habitat: • A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent un-necessary construction activity from intruding into Coastal and Floodplain Grazing Marsh. The fence design will include gaps to allow mammals, such as Otter, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these mammal passes will be determined following pre-commencement surveys. • Any access that is required will utilise existing access points, such as those already used by agricultural machinery. Vegetation clearance in these areas will also be minimised as much as is practicable. • Construction compounds are outside of these habitats, with security fencing implemented at an early stage to ensure incursion into this habitat does not occur. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may impact

IEF	Embedded avoidance and mitigation measures
	habitats and disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare and light spillage.
Habitat Grassland - Other calcareous grassland	**Proposed Development design**: This habitat is within the Cable Corridor and is associated with Navenby, Green Man LWS. Therefore, the embedded avoidance and mitigation measures presented above (for Navenby, Green Man LWS) are applicable for this habitat, as secured by the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**.
Habitat – Wetland - other wetlands, swamp and Ponds (non-priority)	**Proposed Development design:** In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development design ensures wetland habitats (and the swamp habitat that is within it) are outside of the developable areas. Therefore, this habitat will be retained and measures taken to avoid direct or indirect impacts to this habitat. As secured in the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development design includes undeveloped areas of at least 20m between standing water and the Proposed Development. Standard environmental protection measures will also prevent the runoff of sediment and pollutants to standing water, as detailed in **Chapter 9: Water Environment of this ES [EN010154/APP/6.1]** and the **Framework CEMP**. Therefore, measures have been taken to avoid direct or indirect impacts to this habitat. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, to minimise impacts to this habitat: • A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. The fence design will include gaps to allow fauna that may use swamp habitats (including small deer, Badger, Brown Hare and Hedgehog), to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these gaps will be determined following pre-commencement surveys.
Habitat – Main Rivers (including Ditches)	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7],** the Proposed Development design ensures running water habitats are outside of the developable areas as much as is practicable, with Main Rivers such as the River Witham and River Brant avoided completely. To protect the riparian habitats associated with running water, the Proposed Development

IEF	Embedded avoidance and mitigation measures

design includes undeveloped areas of at least 10m from the bank-top of any watercourse (extended to a minimum of 100m from the River Witham where the Interconnecting Cable Corridor is proposed and in recognition of the presence of Otter).

Construction: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. These standard environmental protection measures will also prevent the runoff of sediment and pollutants to running water, as detailed in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**. Additionally:

- A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into the riparian habitats of running water (a minimum 10m from the bank-top of the watercourse). The fence design will include gaps to allow fauna that may use running water habitats, including Badger and Otter, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these gaps will be determined following pre-commencement surveys.
- Any access that is required for construction of the Cable Corridor, where it crosses running water habitats, will utilise existing access points, such as those already used by agricultural machinery. Vegetation clearance in these areas will also be minimised as much as is practicable. There will be no access over the River Witham or River Brant.
- All cables will be installed at a minimum of 2m below minor/ordinary watercourses (except where minor/ordinary watercourses have minimal or no water flow and water management is easily managed) and 5m beneath main rivers, excluding the River Witham and River Brant where cables will be installed by trenchless methods (e.g. HDD) at a minimum of 5m below the bed to prevent disturbance to fish species using running water habitats (as agreed with the Environment Agency, see **Table 8-3**). The combination of sealed cabling and buried depth of at least 5m below the bed of the River Witham and River Brant is adequate to mitigate any potential impact of Electromagnetic Fields (EMFs) on fish transiting along these rivers (see also fish, below). Launch and exit pits will be located outside of Main Rivers (River Witham and River Brant).
- Construction compounds will be setback from running water habitats, with a minimum 10m from the bank-top of the watercourse (as described above), with security fencing implemented at an early stage to ensure incursion into the riparian habitats of running water does not occur.
- Where possible, surface water will drain from the Proposed Development's Sustainable Drainage Systems (SuDS) based drainage system to local receiving watercourses via a new ditch as this avoids the need to construct an engineered outfall. However, if engineered outfalls are required, the location, position and orientation of them will be carefully designed to minimise any adverse impacts on aquatic habitats.
- Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may disrupt

IEF	Embedded avoidance and mitigation measures
	species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.
Habitat – Cropland – arable field margins (*including scarce arable flora)	**Proposed Development design**: The Proposed Development has been designed to retain and avoid development within these arable fields where feasible, but the majority of this habitat will be lost. This habitat is readily re-created within arable field margins, through management such as annual cultivation. New areas of equivalent or higher value grassland habitat are also proposed, as presented in the **Framework LEMP [EN010154/APP/7.15]**. Retained arable field margins will be managed through annual cultivation to provide suitable conditions for arable flora to grow. Specific mitigation for the scarce arable flora species in the fields of national and county importance (AF17, AF29 and AF72) will be provided as presented in the **Framework LEMP [EN010154/APP/7.15]**.
	Construction: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, a security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats, as far as is practicable. Accessible arable field margins within the DCO Site will be cultivated annually (outside the nesting bird season) to provide suitable conditions for germination. Prior to construction scarce arable flora seed from fields AF17, AF29 and AF72 would be harvested by hand and seeded in cultivated field margins within retained arable fields close to these fields.
Habitat – Cropland – arable fields with pollen and nectar and, or, wild bird mix	**Proposed Development design**: The Proposed Development has been designed to retain and avoid development within these fields where feasible, but the majority of this habitat will be lost. This habitat is readily re-created within arable fields, as often sown after annual cultivation. New areas of equivalent or higher value grassland habitat are proposed, as presented in the **Framework LEMP [EN010154/APP/7.15]**.
	Construction: Where habitats are retained, the **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, a security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats, as far as is practicable.

IEF	Embedded avoidance and mitigation measures
Habitat – hedgerows, including mixed scrub / willow scrub and scattered scrub along habitat boundaries.	**Proposed Development design**: The Proposed Development has been designed to minimise hedgerow and scrub loss with the majority of hedgerows and areas of scrub across the DCO Site retained. Small areas of hedgerow and scrub will be lost, mainly for access widening. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, to minimise impacts to this habitat: • Retained hedgerows and scrub along field or ditch boundaries and/ or woodland edges will be protected, in line with British Standard Recommendations (Ref 8-90) with undeveloped buffers of at least 5m from the boundary of hedgerows without trees and a wider buffer, concordant with the requirements for each individual tree, for any hedgerows with trees (see **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3]**). These areas will prevent damage/compaction of roots by plant and other machinery and prevent direct or indirect impacts to hedgerows. • A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into hedgerows and scrub. The fence design will include gaps to allow fauna that may use these habitats, including Badger, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these gaps will be determined following pre-commencement surveys. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage. • The Proposed Development will seek to retain any hedgerows deemed 'important' under the Wildlife and Landscape criteria of the Hedgerows Regulations (Ref 8-11) where possible in line with the **Framework CEMP [EN010154/APP/7.7]**. With regards to any localised removal of Ecological Important Hedgerows (as per the **Hedgerow Plan [EN010154/APP/2.9]** and **Appendix 8-B: Terrestrial Habitats and Notable Flora** of this ES **[EN010154/APP/6.3]**) to facilitate construction, where hedge removal is required for visibility splays only, where practical they will be trimmed down to a height to be agreed with County Highways, most likely 0.9m, so that it is not removed altogether and can regrow after construction. • Construction compounds will be set back from hedgerows and scrub (as described above), with security fencing implemented at an early stage to ensure incursion into hedgerows does not occur.

IEF	Embedded avoidance and mitigation measures
Aquatic macroinvertebrates and macrophytes	**Proposed Development design**: The Proposed Development has been designed to ensure standing water habitats, supporting aquatic macroinvertebrates and macrophytes, are outside of the developable areas. In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development design includes undeveloped areas of at least 10m from the bank-top of any watercourse (and 20m from any standing water), to protect the riparian habitats that may support aquatic macroinvertebrates and macrophytes, thereby avoiding any direct or indirect impacts. **Construction:** The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, a security perimeter fence will be implemented early in the construction phase to secure the Principal Site and prevent construction activity from intruding into retained habitats supporting aquatic macroinvertebrates and macrophytes, as far as is practicable. These standard environmental protection measures will also prevent the runoff of sediment and pollutants to standing water (and therefore removing impacts to aquatic macroinvertebrates and macrophytes), as detailed in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**. Additionally: • A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.
Fish	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development design avoids development within the majority of habitats of value to fish, notably the River Witham, River Brant and their tributaries. Undeveloped areas of a minimum of 10m from the bank-top of watercourses are included within the design of the Proposed Development to protect riparian habitats and to mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to watercourses and any species using them, including fish.

IEF	Embedded avoidance and mitigation measures

Construction: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention, to prevent adverse impacts to retained habitats supporting (or potentially supporting) fish (including the avoidance and buffering of watercourses). A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. These standard environmental protection measures will also prevent the runoff of sediment and pollutants to running water, as detailed in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**. Additionally:

- No new culverts are proposed, so this will allow continued connectivity and fish passage along the watercourses. However, culvert extensions may be required in some locations. For cable crossings, the avoidance of intrusive trenching techniques will minimise impacts on fish species and maintain connectivity of habitats for fish, e.g., Eels. However, fish rescue may be required under a FR2 permit granted by the EA during construction where de-watering or over-pumping is required. Where any over-pumping is required, Eels (England Wales) Regulations 2009 (Ref 8-14) compliant screens will be used on any pump used for drain-down or over pumping of watercourses.
- During activities where there are direct impacts to watercourses or water bodies, for example through drain-down, or open-trenching, the following best practice methods will be followed:
  - avoidance of key fish migration timings wherever practicable;
  - construction will be undertaken during daylight hours to avoid the need for artificial light;
  - all cables will be installed at a minimum of 2m below minor/ordinary watercourses (except where minor/ordinary watercourses have minimal or no water flow and water management is easily managed) and 5m beneath main rivers, excluding the River Witham and River Brant where cables will be installed by trenchless methods (e.g. HDD) at a minimum of 5m below the bed to prevent disturbance to fish species. The combination of sealed cabling and buried depth of at least 5m below the bed of the River Witham and River Brant is also adequate to mitigate any potential impact of EMFs on fish transiting along these rivers (as agreed with the Environment Agency, see **Table 8-3**). These inherent design features (cable sealing) and embedded installation techniques (buried depth) are sufficient to reduce EMFs to levels that are unlikely to be perceivable to fish species; and
  - if required, fish rescue and / or translocation during drain-down of watercourses or water bodies or over-pumping for open trenching through watercourses / ditches.

Proposed Development design: As per the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development has been designed to retain

IEF	Embedded avoidance and mitigation measures
Terrestrial invertebrates	and avoid direct and indirect impacts to habitats of greatest value to terrestrial invertebrates within the DCO Site, including woodland, grassland margins, ditches, scrub and hedgerows. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, to minimise impacts to retained habitats of greater value to terrestrial invertebrates, a security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats.
Grass Snake and Common Toad	**Proposed Development design**: As per the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development has been designed to retain and avoid the majority of habitats of value to reptiles and amphibians, including woodland, grassland margins, ditches, scrub and hedgerows within the DCO Site. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention, to prevent adverse impacts to retained habitats supporting Grass Snake or Common Toad. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. Additionally: • Pre-construction surveys will be undertaken to support the baseline survey findings, the purpose of which is to ensure mitigation during the construction phase is based on the latest protected species information and Proposed Development design and are secured in the **Framework CEMP [EN010154/APP/7.7]**. Should there have been any changes to the Proposed Development design which could impact upon Grass Snake and Common Toad, where found within the DCO Site, then mitigation measures will be updated accordingly. • Vegetation clearance throughout the DCO Site will be undertaken in advance of construction and at an appropriate time of year so as to avoid incidental injuring or killing of reptiles (and also Common Toad), concordant with the requirements for other species, such as nesting birds and Brown Hare. Vegetation supporting reptiles will be cut in a phased approach, firstly cutting to 30cm, then, following a period of no less than 24 hours, to 15cm and then to ground level, after another 24 hours. In areas where Grass Snake (and Common Toad) have been identified, any habitat features within such areas which may conceal sheltering Grass Snake (and Common Toad) such as log piles, rubble mound bunds will not be dismantled during their inactive season (November to February inclusive). There will be no need to undertake any relocation of reptiles within the DCO Site.

IEF	Embedded avoidance and mitigation measures
	• Any excavations will be covered, or a means of escape (such as a ramp) will be implemented to prevent reptiles and amphibians becoming trapped. No excavations will remain open overnight.
Breeding birds (general breeding bird assemblage)	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development has been designed to retain and avoid the majority of peripheral and boundary habitats of value to breeding birds, including woodland, grassland margins, ditches, scrub and hedgerows within the DCO Site. These habitats are of value to the majority of the breeding bird assemblage, therefore, ensuring that SPI that are reliant on such habitats (such as Yellowhammer *Emberiza citrinella*, Linnet *Linaria cannabina* and Dunnock *Prunella modularis*) are not adversely impacted upon by the Proposed Development. Buffers around these retained features are secured in the **Framework CEMP [EN010154/APP/7.7]**. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention, to prevent adverse impacts to retained habitats supporting breeding birds. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. Additionally: • The **Framework CEMP [EN010154/APP/7.7]** specifies the requirements for pre-construction vegetation clearance to, where practicable, avoid the typical nesting bird period i.e., March to August (inclusive). Should any vegetation clearance be required within the nesting bird period then this will be checked, prior to vegetation removal, for the presence of nesting birds, by a suitably qualified ornithologist. If active nests are found, then these will be avoided with appropriate buffer zones put in place and the area monitored until the young birds have fledged and/ or the nesting attempt has ceased.
Breeding birds – territories of Lapwing and Skylark within the DCO Site	**Proposed Development design:** Through the evolution of the design of the Proposed Development, which includes requirements for other environmental disciplines, areas of habitat retention, creation and habitat enhancement have been incorporated into the design to offset the impact of loss of arable farmland for breeding Skylark, Lapwing and other ground nesting birds. These areas, as set out in the **Framework OEMP [EN010154/APP/7.8]** and presented in **Figure 8-5: Bird Mitigation Land Allocation** of this ES **[EN010154/APP/6.2]**, and shown on **Figure 7.15-1: Landscape Mitigation Plan** within the **Framework Landscape and Ecological Management Plan (LEMP) [EN010154/APP/7.15],** will provide extensive benefits for other IEFs and wider biodiversity and include 64ha of permanent grassland and 181ha of managed arable. Grassland and arable in these areas will be managed restrictively for the provision of ground-nesting birds. This will be achieved through avoidance of management activities during the breeding season (March to August inclusive) and, outside of these periods, grassland areas will be managed to ensure that the habitat remains at a suitable sward height and density. Individual fields proposed for mitigation are at least 5ha in size and where possible clusters of fields have been identified (also considering landownership) that have minimal mature vegetation (woodlands and trees) around their boundaries, are away from sources of disturbance and are located on the edge of the Proposed

IEF	Embedded avoidance and mitigation measures
	Development, i.e., not surrounded by solar infrastructure. Arable fields will continue as currently used for Maize, Barley or Wheat and, within these fields, Skylark plots will be created at a rate of 2 per ha, comprising essentially a small uncropped/fallow area at least 3m wide and between 16 and 24 m^2 in area (e.g. 4 x 4m). In each field, the plots will be created as groups a minimum of 25m between the plots and at least 50m from the field boundary.
	Construction: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention, to prevent adverse impacts to retained habitats supporting breeding birds. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. Additionally: • The **Framework CEMP [EN010154/APP/7.7]** specifies the requirements for pre-construction vegetation clearance to, where practicable, avoid the typical nesting bird period i.e., March to August (inclusive). Should any vegetation clearance be required within the nesting bird period then this will be checked, prior to vegetation removal, for the presence of nesting birds, by a suitably qualified ornithologist. If active nests are found, then these will be avoided with appropriate buffer zones put in place and the area monitored until the young birds have fledged and/ or the nesting attempt has ceased.
Breeding birds – territories of specially protected species within the DCO Site	**Proposed Development design:** In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** , the design of the Proposed Development retains and avoids habitats where territories of specially protected bird species have been recorded. Areas of undeveloped land (as presented in **Figure 8-5: Bird Mitigation Land Allocation** of this ES **[EN010154/APP/6.2]**) will provide a wide range of benefits for biodiversity and will be attractive to any specially protected bird species reliant on such habitats.
	Construction: The **Framework CEMP [EN010154/APP/7.7]** specifies the requirements for pre-construction vegetation clearance to, where practicable, avoid the typical nesting bird period i.e., March to August (inclusive). Should any vegetation clearance be required within the nesting bird period then this will be checked, prior to vegetation removal, for the presence of nesting birds, by a suitably qualified ornithologist. If active nests are found, then these will be avoided with appropriate buffer zones put in place and the area monitored until the young birds have fledged and/ or the nesting attempt has ceased. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. Additionally: • Pre-construction surveys will be undertaken to support the baseline survey findings and identify the locations of specially protected bird species, the purpose of which is to ensure mitigation during the construction phase is based on the latest information and are secured in the **Framework CEMP [EN010154/APP/7.7]**. Should there have been any changes to the

IEF	Embedded avoidance and mitigation measures
	Proposed Development design which could impact upon nesting Schedule 1 species, then mitigation measures will be updated accordingly. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]** will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance that could impact upon specially protected nocturnal bird species. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.
Non-breeding birds	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development has been designed to retain and avoid the majority of peripheral and boundary habitats of value to non-breeding birds, including woodland, grassland margins, ditches, scrub and hedgerows within the DCO Site. These habitats are of value to the majority of the non-breeding bird assemblage, therefore, ensuring that SPI that are reliant on such habitats (such as Yellowhammer, Linnet and Dunnock) are not adversely impacted upon by the Proposed Development. Buffers around these retained features are secured in the **Framework CEMP [EN010154/APP/7.7]**. The design of the Proposed Development includes undeveloped land within the DCO Site (as presented above, for breeding birds, that will also be beneficial to non-breeding birds.
	Construction: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention to prevent adverse impacts to retained habitats supporting non-breeding birds. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats.
Bats (foraging / commuting and roosting)	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the design of the Proposed Development retains and avoids peripheral and boundary habitats, such as woodland, hedgerows, grassland margins, ditches that are used by commuting and foraging bats and habitats such as mature trees and woodland within the DCO Site, potentially supporting roosting bats, will also be suitably buffered (e.g. 15m from woodland) from the developable areas of the Proposed Development.
	Construction: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention to prevent adverse impacts to retained habitats potentially supporting roosting or commuting / foraging bats.

IEF	Embedded avoidance and mitigation measures
	A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. Additionally: • Pre-construction (ground level inspection) surveys will be undertaken to support the baseline survey findings, the purpose of which is to ensure mitigation during the construction phase is based on the latest protected species information and Proposed Development design and are secured in the **Framework CEMP [EN010154/APP/7.7]**. Should there have been any changes to the design which could impact upon roosting bats (i.e. additional tree removal of trees with potential to support roosting bats), where found within the DCO Site, then Natural England licences will be sought (if required) and mitigation measures updated accordingly. • Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats (including adjacent LWS's) which may impact habitats and disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage. • Where any temporary work is required within 15m of any tree with the potential to support roosting bats, such as enabling works or clearance for construction, then a precautionary working method statement would be provided to avoid potential impacts. This would include the use of an Ecological Clerk of Works (ECoW).
Riparian mammals (Water Vole and Otter)	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development has been designed to ensure running water habitats that support riparian mammals are outside of the developable areas of the Proposed Development. Undeveloped areas of a minimum of 10m from the bank-top of watercourses (extended to a minimum of 100m from the River Witham where the Interconnecting Cable Corridor is proposed) are also included within the design to protect riparian habitats, some of which (such as the River Witham) support Water Vole and Otter. These buffers and undeveloped zones will mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to watercourses and any protected species using them.
	Construction: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention, to prevent adverse impacts to retained habitats supporting riparian mammals (including the avoidance and buffering of watercourses). A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction

IEF	Embedded avoidance and mitigation measures

activity from intruding into retained habitats. These standard environmental protection measures will also prevent the runoff of sediment and pollutants to running water, as detailed in **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**. Additionally:

- Pre-construction surveys will be undertaken to support the baseline survey findings (as presented in this Chapter) where intrusive crossing methods of watercourses are proposed within the DCO Site. The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species information and are secured in the **Framework CEMP [EN010154/APP/7.7]**. Where there have been any changes to Otter or Water Vole distribution within the DCO Site, mitigation measures (such as non-intrusive crossing for cabling) will be updated accordingly and the relevant Natural England protected species licence application would be applied for if disturbance to, for example breeding Otter, was unavoidable.
- Construction of the Interconnecting Cable Corridor near the River Witham and of the Cable Corridor near the River Brant will be undertaken using trenchless techniques (e.g. HDD) that would not disturb the watercourse, with the depth of the cable below the bed of these rivers to be a minimum of 5m, to avoid impacts to watercourses and bankside vegetation (riparian habitats) and also including launch and exit pits setback a minimum of 10m from the bank-top of the watercourse to protect riparian habitats.
- Measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas (e.g., fencing) will prevent animals from falling into and becoming trapped in excavations. Furthermore, any excavations will be covered, or a means of escape (such as a ramp) will be provided. No excavations will remain open overnight.
- Construction of the Interconnecting Cable Corridor within 100m of the River Witham will only be undertaken during daylight hours and will avoid two hours after sunrise and two hours before sunset, reduced to one hour between November and February (inclusive) because of the limited daylight hours. This will prevent disturbance to any Otter that may be using the River Witham.
- Any lighting used during construction (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**, particularly in winter months when daylight hours are shorter, has the potential to spill into adjacent habitats which may disrupt species' movements. Any lighting that is required for the construction of the Proposed Development will have a power output of 8kVA and will be directed away from existing retained and sensitive habitats to minimise light disturbance. Task-specific lighting will be tower-mounted and designed to be downward directional, only being used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.

IEF	Embedded avoidance and mitigation measures
Badger	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development has been designed to avoid Badger setts within the DCO Site. Any setts within the Principal Site will have an appropriate exclusion zone of 30m around the sett to prevent disturbance and accidental damage. The Cable Corridor is sufficiently wide that the final route for the cable laying can be micro-sited to avoid any Badger setts, including a 30m exclusion zone around setts. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention, to prevent adverse impacts to retained habitats supporting Badger (including the avoidance and buffering of setts). A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. Additionally: • Pre-construction surveys will be undertaken to support the baseline survey findings (as presented in this Chapter). The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species information and are secured in the **Framework CEMP [EN010154/APP/7.7]**. Should there have been any changes to Badger distribution within the DCO Site and where adverse impacts cannot be avoided, Natural England licences will be sought (if required) and mitigation measures will be updated accordingly. • Measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas (e.g., fencing) will prevent animals from falling into and becoming trapped in excavations. Furthermore, any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight.
Other mammals (Brown Hare, Hedgehog and Harvest Mouse)	**Proposed Development design**: In line with the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**, the Proposed Development has been designed to avoid (and include undeveloped buffers from) the majority of habitats that are of greatest value to SPI mammals within the DCO Site such as woodland, grassland margins, ditches, scrub and hedgerows. **Construction**: The **Framework CEMP [EN010154/APP/7.7]** outlines the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention, to prevent adverse impacts to retained habitats supporting other SPI mammals. A security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats. Additionally: • Vegetation clearance will be undertaken in advance of construction and at an appropriate time of year to avoid incidental injuring or killing of animals, such as Brown Hare and concordant with the requirements for other species such as nesting birds and reptiles.

IEF	Embedded avoidance and mitigation measures
	• Any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight.
Invasive non-native species (INNS)	**Construction**: Pre-construction surveys will be undertaken to provide an update on the presence and location of any INNS plant species, the findings of which will inform the implementation of measures to prevent their spread into the wild and are secured in the **Framework CEMP [EN010154/APP/7.7]**. These surveys will inform the production of a Biosecurity Management Plan which will set out procedures to ensure that no INNS plant species are spread from the DCO Site, into the DCO Site or within the DCO Site (e.g., Wildlife and Countryside Act 1981 (as amended) Schedule 9 species (Ref 8-1)) and will be formalised in the detailed CEMP, secured through the DCO. In the event that any future infestations of INNS are identified prior to and or during the development process, exclusion zones will be established around them, and an Ecological Clerk of Works (ECoW) contacted for advice as required.

Operation and Maintenance

8.10.8 During the operational phase, activity on the Principal Site will be limited and would be restricted principally to vegetation management, equipment maintenance and servicing, periodic replacement of components, periodic fence inspection, and monitoring to ensure the continued effective operation of the Proposed Development. There will also be a requirement for the washing of the solar panels, although this is expected to be once every two years. This will use clean water with no added chemicals, although a biodegradable water softener may be used, with water sourced from local potable water suppliers (refer to **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]** for further information).

8.10.9 During operation, it is anticipated that the number of access points will be reduced from construction, with removal of track materials and re-instatement of vegetation at locations no longer required during operation (see also **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**).

8.10.10 Along the Cable Corridor, operational activity will consist of routine inspections (schedule to be determined) and any reactive maintenance such as where a cable may have been damaged. By following procedures secured in the Framework OEMP **[EN010154/APP/6.1]** these inspections are unlikely to result in any significant impacts to IEFs, e.g. nesting birds.

8.10.11 It is anticipated that there will be up to four permanent staff on-site during the operational phase. The Proposed Development is expected to generate a low level of vehicle trips during the operational phase. However, if solar panel and BESS replacement is required at some point during the lifetime of the Proposed Development (panel replacement to be undertaken in phases), activity would be considerably less intensive than during construction and is anticipated to generate approximately 10% of the daily HGV/coach and car/LGV movements estimated to be generated during peak construction of the Proposed Development. Further discussion on operational transport movements is presented in **Chapter 16: Traffic and Transport** of this ES **[EN010154/APP/6.1].**

8.10.12 As presented in **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]** and in the **Framework LEMP [EN010154/APP/7.15]**, grazing by sheep is the Applicant's preferred option for the management of the grassland created within the Solar PV areas of the Principal Site. Sheep grazing on solar PV facilities is successfully used in the UK and carries with it multiple benefits such as soil health improvement and biodiversity enhancement. Furthermore, grazing achieves an essential maintenance function (maintaining the grass at a low level) without the need for machinery.

8.10.13 The general principles to be followed during operation and maintenance of the Proposed Development to minimise impacts are presented below. The **Framework OEMP [EN010154/APP/7.8]** alongside **Appendix 9-D: Framework Surface Water Drainage Strategy** of this **ES [EN010154/APP/6.3]** and the **Framework LEMP [EN010154/APP/7.15]** formalise the measures that will be implemented during operation and

maintenance of the Proposed Development in accordance with the relevant Requirement in Schedule 2 of the DCO. These measures include:

a. No part of the Proposed Development will be continuously lit. For security requirements, operational lighting would include Passive Infra-red Detector (PID) systems which would be installed around the perimeter of the Proposed Development. Lighting of the primary substation would be in accordance with health and safety requirements, particularly around any emergency exits where there would be motion sensor triggered lighting, similar to street lighting, that would operate from dusk. There would be low level lighting on specific operational units that would operate, when triggered by motion sensors, from dusk. All lighting would seek to limit any impact on IEFs, e.g. bats and other SPI.

b. The surface water drainage strategy (**Appendix 9-D: Framework Surface Water Drainage Strategy** of this ES **[EN010154/APP/6.3**]) includes measures to manage surface water runoff during operation and maintenance and will reduce the likelihood and severity of potential pollution incidents and flooding affecting watercourses and the local ditch network to reduce or eliminate adverse effects for aquatic and riparian species and habitats.

c. The creation and subsequent management of habitats will be determined by the characterisation of the existing baseline. However, management will seek to maximise floristic diversity, which will be managed through low density and short frequency sheep grazing (conservation grazing) as a primary option or an appropriate, sensitive mowing regime. Further details of vegetation management are provided and secured in the **Framework LEMP [EN010154/APP/7.15]**.

d. Any required management of vegetation within the Proposed Development will be undertaken in accordance with legislative requirements associated with breeding birds e.g. undertaken outside of the bird nesting season (typically March to August inclusive) and in consideration of the presence of other SPI, e.g. reptiles. Further details of vegetation management are provided and secured in the **Framework LEMP [EN010154/APP/7.15]**.

e. A programme of monitoring, as described in and secured in the **Framework LEMP [EN010154/APP/7.15],** will be established prior to operation and maintenance to ensure that biodiversity measures are implemented according to plan with necessary remediation.

Decommissioning

8.10.14 The general principles to be followed in the decommissioning of the Proposed Development include measures to mitigate likely significant decommissioning related effects on biodiversity. These will be formalised through the Framework DEMP **[EN010154/APP/7.9]** in accordance with the relevant Requirement in Schedule 2 of the DCO. Whilst the majority of mitigation measures will be similar to those during construction (as above), monitoring undertaken during the operation and maintenance phase and pre-decommissioning surveys will

inform any mitigation and protected species licencing, as required (informed by legislation and planning policy) at the time of decommissioning. A detailed DEMP will be prepared and agreed with the relevant authorities at the time of decommissioning, in advance of the commencement of decommissioning works.

8.11 Screening for Potential Impacts and Effects

8.11.1 An initial screening of the potential for impacts and effects to arise from the construction, operation and maintenance, and decommissioning phases of the Proposed Development (as described in **Chapter 3: The Proposed Development** of this ES **[EN010154/APP/6.1]**) on the IEFs identified in **Table 8-12** is provided in **Table 8-14** and **Table 8-15**, to focus the potential impact pathways likely to require further detailed assessment.

8.11.2 This initial screening is based on the characterisation of the baseline conditions, in the absence of any mitigation over and above that which is currently embedded in the design. As such the 'worst case assessment' presented is reflective of the current baseline information held and associated professional judgement applied to the assessment of effects.

Sites Statutorily and Non-Statutorily Designated for their Biodiversity Value

8.11.3 The statutorily and non-statutorily designated sites that have been assessed, based on the baseline data identified during the desk study, are presented in **Table 8-14**. Where there is the potential for effects to occur on designated sites, then this is stated and the relevant features assessed in **Section 8.12** of this Chapter to determine the significance of that effect.

Table 8-14: Determination of potential impacts and effects on IEFs – Designated Sites

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
Whisby Nature Park LNR (located approximately 410m north of the Principal Site)	High	**Construction**: This LNR (primary designation being wetland, grassland and woodland habitats) is approximately 410m to the north of the Principal Site and there are no ecological connections (there are roads and settlements (including Thorpe-on-the Hill) between the Proposed Development and the LNR) or hydrological (there are no connecting watercourses, as reviewed from OS mapping) links between this LNR and the DCO Site (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**). As the LNR is 410m outside of the DCO Site, there will be no direct impacts on habitat within the LNR; no fragmentation of habitats, or of populations of species using habitats within this LNR and no species mortality. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]**, will ensure no impact on the integrity or the functioning of Whisby Nature Park LNR, through the use of standard environmental protection measures to remove the potential for indirect impacts. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of Whisby Nature Park LNR.	No
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to designated site features (such as through noise, water quality, air quality, lighting or visual) which could affect this LNR. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of Whisby Nature Park LNR during operation and maintenance of the Proposed Development.	No
		Decommissioning: As with construction, there will be no disturbance or direct impact to this LNR, fragmentation of habitats, habitat degradation or species mortality arising from decommissioning activities and any impacts at the time of	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
		decommissioning would be mitigated fully in line with relevant legislative and policy requirements. Measures to remove or reduce impacts during decommissioning will be included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements.	
Swanholme Lakes LNR / SSSI (located approximately 4km north east of the Principal Site)	High	**Construction**: This LNR / SSSI (primary designation being wetland habitats) is approximately 4km to the north east of the Principal Site and there are no ecological connections (there are roads and settlements between the Proposed Development and the LNR / SSSI) or hydrological (there are no connecting watercourses) links between this LNR / SSSI and the DCO Site. As this designated site is 4km outside of the DCO Site, there will be no direct impacts on habitat within the LNR / SSSI; no fragmentation of habitats, or of populations of species using habitats and no species mortality of any species associated with Swanholme Lakes LNR / SSSI. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]**, will ensure no impact on the integrity or the functioning of Swanholme Lakes LNR / SSSI, through the use of standard environmental protection measures to remove the potential for indirect impacts. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of Swanholme Lakes LNR / SSSI.	No
		Operation and Maintenance: Given the distance and lack of pathways between the LNR / SSSI and the DCO Site it is not considered that there are any impacts arising during operation and maintenance of the Proposed Development that could affect Swanholme Lakes LNR / SSSI.	No
		Decommissioning: As with construction there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of Swanholme Lakes LNR / SSSI during decommissioning activities of the Proposed Development.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
Navenby, Green Man Road Verges LWS* (*including other calcareous grassland habitat)	Medium	**Construction**: Navenby, Green Man Road Verges LWS is within the footprint of the Cable Corridor. During construction, access will be required across the LWS to access the Cable Corridor, over a working width of 30m of reversible loss of this LWS. Laying of cabling will directly impact on habitat within this LWS, along a working area of approximately 30m. Such an incursion would fragment habitats within the LWS. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there is no construction related pollution that would affect this LWS and consequently that there will be no species mortality of any species using these LWS. The 30m section of the LWS grassland impacted will be re-instated and re-seeded following the laying of cabling and hedgerow re-instatement and secured in the **Framework LEMP [EN010154/APP/7.15]** .	Yes
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to designated site features (such as through pollution incidences involved with noise, changes in water quality, air quality, adverse lighting or visual impacts) which could affect River Witham, Aubourn to Beckingham LWS. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon these non-statutorily designated sites during operation and maintenance of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. As described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**, buried cables would either be removed or left *in situ*. The current practice is to remove cables (leaving the ducting in place), as this avoids disturbance to overlying land and habitats, the cabling can be removed by opening up the ground at regular intervals and pulling through to an extraction point, avoiding	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
		the need to open up the entire length of the Cable Corridor. Therefore, it should be possible to avoid disturbance to the habitats associated with LWS and additional measures to remove impacts to habitats within this LWS includes retention and avoidance of habitats and pollution (e.g. spillages, noise, light) control.	
River Witham, Aubourn to Beckingham LWS		**Construction**: The River Witham, Aubourn to Beckingham LWS is within the Principal Site (**Figure 8-2: Non-statutory sites designated for their biodiversity value** of this ES **[EN010154/APP/6.2]**), but the design of the Proposed Development (as set out in the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**), ensures that this LWS is avoided and outside of the developable areas of the Proposed Development with appropriate setbacks of >10m from the banktop of the watercourse (see also Main Rivers in **Table 8-15**). Cable crossings within the Cable Corridor will be installed by non-intrusive techniques (HDD) with no access proposed over the River Witham and appropriate setbacks of 10m from the bank-top of the river to protect riparian habitats. HDD at insufficient depths can generate the potential effect of sediment mobilisation and disturbance of the bed of any watercourse, however, cables will be buried at a minimum depth of 5m below the bed of the River Witham through HDD and this embedded mitigation removes this potential impact. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]**, will ensure no impact on the integrity or the functioning of this LWS, through the use of standard environmental protection measures to remove the potential for indirect impacts. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of this LWS.	No
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to designated	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
		site features (such as through pollution incidences involved with noise, changes in water quality, air quality, adverse lighting or visual impacts) which could affect River Witham, Aubourn to Beckingham LWS. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon this LWS during operation and maintenance of the Proposed Development.	
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. As described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**, buried cables would either be removed or left *in situ*. The current practice is to remove cables (leaving the ducting in place), as this avoids disturbance to overlying land and habitats, the cabling can be removed by opening up the ground at regular intervals and pulling through to an extraction point, avoiding the need to open up the entire length of the Cable Corridor. Therefore, it should be possible to avoid disturbance to watercourses and additional measures to remove impacts to aquatic habitats within this LWS includes retention and avoidance of habitats and pollution (e.g. spillages, noise, light) control.	No
Four non-statutorily designated sites within 100m of the DCO Site	Medium	**Construction**: Four LWS (Tunman Wood LWS, Tunman Wood North LWS, Navenby Heath Road Verges LWS and Gorse Lane LWS) are outside of the DCO Site but are immediately adjacent to or within 100m of the DCO Site. All are designated for their habitat and there are ecological connections between these LWSs and the DCO Site. There will be no loss of habitat within these LWSs, nor fragmentation of habitats, or of populations of species using habitats within any of these non-statutorily designated	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
		sites during construction. Boundary vegetation, such as hedgerows and ditches, potentially linking LWSs to the DCO Site, will be retained as secured in the **Framework CEMP [EN010154/APP/7.7]** and **Framework LEMP [EN010154/APP/7.15]**. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there are no impact pathways that will affect the integrity or the functioning of LWSs and consequently that there will be no species mortality of any species using these LWS. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of these non-statutorily designated sites.	
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to designated site features (such as through pollution incidences involved with noise, changes in water quality, air quality, adverse lighting or visual impacts)) which could affect LWSs within 100m of the DCO Site. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon these non-statutorily designated sites during operation and maintenance of the Proposed Development.	No
		Decommissioning: These LWSs are outside of the DCO Site and any decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats within the LWSs.	No
23 non-statutorily designated sites	Medium	**Construction**: These LWS are all outside of the DCO Site and >300m from the DCO Site, with the closest LWS being High Dike, Coleby Mill to Harmston Verges LWS	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
>300m from the DCO Site		which is approximately 310m from the Cable Corridor. All of these LWSs are designated for their habitat. The construction of the Proposed Development will not directly impact on habitat within these non-statutory designated sites as they are outside of the DCO Site and consequently, there will be no fragmentation of habitats, or of populations of species using habitats within any of these non-statutorily designated sites during construction. Boundary vegetation, such as hedgerows and ditches, potentially linking these LWS to the DCO Site, will be retained. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there are no impacts on the integrity or the functioning of LWSs outside of the DCO Site; that no construction related pollution would affect these LWSs (e.g. through management of surface water and sediment runoff (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**)) and consequently that there will be no species mortality of any species using these LWS's. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of these non-statutorily designated sites that are outside of the DCO Site.	
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to designated site features (such as through pollution incidences involved with noise, changes in water quality, air quality, adverse lighting or visual impacts)) which could affect LWSs outside of the DCO Site. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon these non-statutorily designated sites during operation and maintenance of the Proposed Development.	No
		Decommissioning: Given the distance of these LWS from the DCO Site and the lack of pathways, as with construction, there will be no disturbance or direct impact to these LWSs, fragmentation of habitats, habitat degradation or species mortality from	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see section 8.9)	Potential for an effect to occur?
		decommissioning activities and any impacts at the time of decommissioning would be mitigated fully in line with relevant legislative and policy requirements. Initial measures to ensure that there are no impact pathways, are included within the **Framework DEMP [EN010154/APP/7.9]** secured as part of the DCO Requirements.	

Habitats and Species

8.11.4 The relevant ecological features (IEFs) that have been assessed, based on the ecological baseline identified during the desk study and field surveys, are presented in **Table 8-15**. Where there is the potential for an effect to occur on known IEFs, then this is stated and the relevant features assessed in **Section 8.12** of this Chapter to determine the significance of that effect.

Table 8-15: Determination of potential impacts and effects on IEFs – Habitats and Species

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
Habitat – broadleaved woodland Woodland and forest – other woodland, mixed	Medium Low	**Construction**: Broad-leaved and other mixed woodland habitat was recorded within the DCO Site and will be retained and protected with 15m undeveloped areas between woodland and the Proposed Development (see **Table 8-13**) as per the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**. There is no Ancient Woodland within the DCO Site, see paragraph 8.6.9 of this Chapter. There will be no direct impact on this habitat; no fragmentation of habitats, or of populations of species using habitats and no species mortality of any species associated with woodland habitats. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there are no impact pathways that will affect the integrity or functioning of this habitat, including ensuring appropriate buffers from construction adjacent to this habitat and pollution control. Should the detailed design route any cables through trees or woodland that are being retained, they will installed via HDD at least 2m beneath the ground surface in order to protect the tree roots. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon the integrity or functioning of woodland habitats.	No
		Operation and Maintenance: During operation of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, lighting or visual)), that could affect woodland habitats. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development. Maintenance on woodland habitats is not expected to be required, but reactive management may be required. Where any reactive management is required, a check will be undertaken of woodland and trees	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		within the DCO Site and remedial works actioned where appropriate (e.g. where they pose an unacceptable risk to people or property) and secured in the **Framework OEMP [EN010154/APP/7.7]**. Trees will be monitored during operation where they pose a risk to infrastructure constructed as part of the Proposed Development. All staff operating on the site are to be made aware of the need to look out for obvious signs of tree defects and to report them to the Site Manager who will seek further advice as necessary.	
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control.	No
Habitat – veteran and ancient trees	High	**Construction:** Veteran and ancient trees were recorded within the DCO Site and will be retained and protected (see **Appendix 10-H: Arboricultural Impact Assessment** of this ES **[EN010154/APP/6.3].** In line with **Figure 7.15-1: Landscape Mitigation Plan** (presented within the **Framework Landscape and Ecological Management Plan [EN010154/APP/7.15]**), the Proposed Development design includes undeveloped areas of at least 15m between woodlands, and appropriate buffers between veteran and ancient trees (based on tree root protection areas) and the Proposed Development, thereby avoiding any direct impact on veteran and ancient trees. There will be no fragmentation of habitats, or of populations of species using veteran trees and no species mortality of any species associated with veteran trees. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure no impact on the integrity of veteran and ancient trees through use of standard environmental protection measures.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Operation and Maintenance: During operation of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, lighting or visual)), that could affect woodland habitats. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development. Maintenance on woodland habitats is not expected to be required, but reactive management may be required. If required during operation, a prior check will be undertaken of trees within the DCO Site and remedial works actioned where appropriate (e.g. where they pose an unacceptable risk to people or property). Trees will be monitored during operation where they pose a risk to infrastructure constructed as part of the Proposed Development. All staff operating on the site are to be made aware of the need to look out for obvious signs of tree defects and to report them to the Site Manager who will seek further advice as necessary.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control.	No
Habitat – *Arrhenatherum* neutral grassland within the Cable Corridor – Coastal and Floodplain Grazing Marsh	Medium	**Construction**: This habitat was identified within the Principal Site, adjacent to the River Witham. There will be no Solar PV Arrays within this habitat, however, this habitat is within the Interconnecting Cable Corridor of the Principal Site. With launch and exit pits outside of this habitat (to facilitate the cable crossing over the River Witham), there will be no direct impact on this habitat; no fragmentation of habitats, or of populations of species using habitats and no species mortality of any species associated with coastal and floodplain grazing marsh.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there are no impact pathways that will affect the integrity or functioning of this habitat, including ensuring appropriate buffers from construction adjacent to this habitat and pollution control to preserve the integrity and functioning of coastal and floodplain grazing marsh.	
		Operation and Maintenance: During operation of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, lighting or visual)), that could affect coastal and floodplain grazing marsh. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. As described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**, buried cables that cross this habitat would either be removed or left *in situ*. The current practice is to remove cables (leaving the ducting in place), as this avoids disturbance to overlying land and habitats, the cabling can be removed by opening up the ground at regular intervals and pulling through to an extraction point. Therefore, it should be possible to avoid disturbance to coastal and floodplain grazing marsh and additional measures to remove impacts to this habitat includes retention and avoidance of habitats and pollution (e.g. spillages, noise, light) control.	No
Habitat - *Deschampsia* neutral grassland	Low	**Construction:** This habitat was identified within the Principal Site, adjacent to the River Witham. There will be no Solar PV Arrays within this habitat, however, this habitat is within the Cable Corridor of the Principal Site. The construction of the Interconnecting	Yes

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Cable will be via trenched method which will lead to a temporary loss of habitat within this area. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there are no other impact pathways that will affect the integrity or functioning of this habitat, including ensuring appropriate buffers from construction adjacent to this habitat and pollution control to preserve the integrity and functioning of this habitat.	
		Operation and Maintenance: During operation of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, lighting or visual)), that could affect this habitat. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. As described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**, buried cables that cross this habitat would either be removed or left *in situ*. The current practice is to remove cables (leaving the ducting in place), as this avoids disturbance to overlying land and habitats, the cabling can be removed by opening up the ground at regular intervals and pulling through to an extraction point. Therefore, it should be possible to avoid disturbance to this habitat and additional measures to remove impacts includes retention and avoidance of habitats and pollution (e.g. spillages, noise, light) control.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
Habitat – Wetland - other wetlands, swamp	Medium	**Construction**: This habitat is found predominantly around water bodies and will be retained with undeveloped areas of 20m for standing water and 10m from watercourses between such habitats and the Proposed Development (see **Table 8-13**), as per the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there are no impact pathways that will affect the integrity or functioning of this habitat, including avoidance of this HaPI, protection of retained habitats and pollution prevention to ensure the integrity of retained swamp habitats are not adversely affected.	No
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, water quality or lighting)), that could affect retained habitats, and maintenance is not expected to be required for swamp habitats. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control.	No
	Local	**Construction**: Water bodies will be retained with undeveloped areas of 20m between these and the Proposed Development (see **Table 8-13**), as per the Design	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
Habitat - Other standing water - Pond (non-priority)		Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3]** and the **Framework CEMP [EN010154/APP/7.7]**. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** will ensure there are no impact pathways that will affect the integrity or functioning of this habitat, including avoidance and protection of retained habitats and pollution prevention to ensure the integrity of retained water bodies are not adversely affected.	
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, water quality or lighting)), that could affect retained habitats, and maintenance is not expected to be required for ponds. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control.	No
Habitat – Main Rivers (including Ditches)	Medium	**Construction**: This habitat is found throughout the DCO Site. Main Rivers (the River Witham and River Brant) will be avoided, with cable crossings installed by non-intrusive techniques (HDD), no access is proposed over these Main Rivers and appropriate setbacks (see **Table 8-13**) from the bank-top of the river to protect riparian habitats. HDD at insufficient depths can generate the potential effect of sediment mobilisation and disturbance of the bed of any watercourse, however, cables will be buried at a	Yes

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		minimum depth of 5m below the bed of Main Rivers through HDD and this embedded mitigation removes this potential impact. Several Ordinary Watercourses and ditches will be crossed by access roads or cable crossings, requiring open-cut crossings, or culvert improvements. Where Ordinary Watercourses and ditches are crossed for cabling or access, crossing points will be designed to allow continued connectivity and fish passage along the watercourse, with a natural bed and no drop inlet or outlet. Within the Principal Site, there are several Ordinary Watercourse / ditch crossings, which are required for access, although these may be updated during detailed design. The majority of these are existing crossing points that may require improvement, although any such improvements will ensure that running water habitats are not impacted through the implementation of mitigation measures outlined in the **Framework CEMP [EN010154/APP/7.7]** (e.g. water quality monitoring and buffer zones). Indicative new crossing points will be included within the design to facilitate construction and similarly will be installed to allow continued connectivity along watercourses to maintain connectivity for any species using them (e.g. fish). Localised SuDS, such as swales and infiltration trenches, will be used to control runoff to remove any indirect impacts to running water habitats (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1])**.	
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, water quality or lighting)), that could affect retained habitats, and maintenance is not expected to be required. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development. The change in land use from agricultural to solar will see benefits in the water table, which has previously been artificially lowered	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		for the purpose of irrigation of arable fields. With c.1,300ha of arable fields no longer needing irrigation, there will be less water abstracted from surface water bodies.	
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. As described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**, buried cables would either be removed or left *in situ*. The current practice is to remove cables (leaving the ducting in place), as this avoids disturbance to overlying land and habitats, the cabling can be removed by opening up the ground at regular intervals and pulling through to an extraction point, avoiding the need to open up the entire length of the Cable Corridor. Therefore, it should be possible to avoid disturbance to watercourses and additional measures to remove impacts to aquatic habitats includes retention and avoidance of habitats and pollution (e.g. spillages, noise, light) control.	No
Habitat – Cropland – arable field margins (* including scarce arable flora species)	Up to High	**Construction**: Arable field margins, some with scarce arable flora species were recorded within the DCO Site, with two fields of County Importance and one of National Importance. Arable margins will be retained as much as is practicable, buffered and their quality improved through positive management, however the majority of this habitat will be lost. This habitat is readily re-created within arable field margins, through management such as annual cultivation. Retained arable field margins will be managed through annual cultivation to provide suitable conditions for arable flora to grow. Specific mitigation for the scarce arable flora species in the fields of national and county importance (AF17, AF29 and AF72) will be provided as presented in the **Framework LEMP [EN010154/APP/7.15]**. Retained arable field margins present within the DCO Site will be protected during construction, as the setbacks (see **Table 8-13**) from watercourses (10m undeveloped	Yes

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		area) and boundary habitats (such as 5m from hedgerows) will likely overlap with and include arable field margins. Security fencing will be installed at an early stage to protect retained habitats from incursion during construction. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** includes avoidance (where practicable) of protected and notable flora, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats are not adversely affected. New areas of equivalent or higher value grassland habitat are also proposed, as presented in the **Framework LEMP [EN010154/APP/7.15]**.	
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, water quality or lighting)), that could affect retained habitats, with the management of retained and new habitats (such as annual cultivation of arable field margins) secured through the **Framework LEMP [EN010154/APP/7.15]**. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impact pathways during operation of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control. Decommissioning access routes are likely to utilise operational accesses and existing access routes across the DCO Site, avoiding loss of this habitat as much as is practicable.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
Habitat – Cropland – arable fields with pollen and nectar and, or, wild bird mix	Up to Medium	**Construction:** Much of this habitat will be lost and re-created elsewhere within the DCO Site as permanent grasslands as secured through the **Framework LEMP [EN010154/APP/7.15]**. Where habitats are retained, the embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** outline the standard embedded good practice measures that will be implemented during construction of the Proposed Development, such as dust suppression and pollution prevention. Additionally, a security perimeter fence will be implemented early in the construction phase to secure the DCO Site and prevent construction activity from intruding into retained habitats, as far as is practicable.	Yes
		Operation and Maintenance: During operation of the Proposed Development, there will be no habitat loss or disturbance to habitats (such as through noise, lighting or visual), that could affect this habitat, as it will be lost during construction. Therefore, there are no impact pathways, either directly or indirectly, that would negatively impact upon arable fields	No
		Decommissioning: Where this habitat has been recreated within the DCO Site, decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control.	No
Habitat – hedgerows (including scrub habitats)	Up to Medium	**Construction**: Whilst the embedded mitigation includes the retention and avoidance of the majority of hedgerows and scrub habitat, there will be the loss of sections of hedgerow and scrub during construction, to facilitate the Cable Corridor, new fence lines and access routes. These habitats will be restored, post-construction, but there is likely to be a temporary (short-term) adverse effect on this habitat type.	Yes

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** and **Framework LEMP [EN010154/APP/7.15]** and include avoidance (where practicable) of hedgerows, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected.	
		Operation and Maintenance: During operation of the Proposed Development, there will be no habitat loss or disturbance to habitats (such as through noise, lighting or visual), that could affect hedgerows. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon hedgerows during operation of the Proposed Development. Any maintenance of hedgerows and areas of scrub during operation of the Proposed Development will be undertaken in a sensitive manner to retain the overall integrity and functioning of this habitat. Therefore, there are no impact pathways, either directly or indirectly, that would negatively impact upon hedgerows.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control. Decommissioning access routes are likely to utilise operational accesses and existing access routes across the DCO Site, avoiding loss of this habitat as much as is practicable.	No
	Low	**Construction**: The construction of the Proposed Development will be offset (>10m) from the bank-top of any watercourses and 20m from standing water as detailed in the	Yes

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
Aquatic macroinvertebrates and macrophytes		embedded design mitigation (see **Table 8-13**). These offsets will prevent disturbance to aquatic and riparian habitats. Where Ordinary Watercourses and ditches are crossed, crossing points will be designed to allow continued connectivity along the watercourse, with a natural bed and no drop inlet or outlet. The construction of the Cable Corridor and any internal access across the DCO Site, where this crosses watercourses, will utilise non-intrusive methods as much as is practicable to avoid physical disturbance to the watercourse, therefore avoiding disturbance to species, habitat loss, and direct mortality for aquatic species. Embedded mitigation measures (see **Table 8-13**) formalised in the **Framework CEMP [EN010154/APP/7.7]** include avoidance (where practicable) of watercourses, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected. There will be minimal mortality of any species associated with running or standing water during construction of the Proposed Development, with appropriate mitigation to relocate aquatic species away from the works areas during construction. Where aquatic macroinvertebrates and macrophytes are lost during construction, these will rapidly re-colonise from adjacent habitats.	
		Operation and Maintenance: Artificial horizontally polarising surfaces (such as solar panels), the reflection-polarisation characteristics of which are similar to those of water, have the potential to attract water-leaving polarotactic insects posing a potential threat to these species. Aquatic macroinvertebrates in their terrestrial or airborne phase may be attracted to these surfaces, which may then disrupt their life cycle. Some aquatic insects are attracted to solar panels although this is an unusual event dependent on the coincidence of several suitable conditions to trigger such behaviour e.g. wind direction and cloud cover. The likelihood of aquatic insects being attracted from the local water bodies to large open areas of shiny surfaces is low given that such species	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		will preferentially use smaller shiny surfaces. Most of the aquatic insect species identified during the desk study are of low conservation value, and do not use open water areas for any of their behaviours (i.e. few *Odonata* (dragonflies) were recorded for example). The impact of solar panels on aquatic insects would therefore be negligible. Therefore, there are no impact pathways, either directly or indirectly, that would negatively impact upon aquatic macrophytes or macroinvertebrates.	
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats and pollution (e.g. spillages, noise, light) control.	No
Fish	Medium	**Construction**: The construction of the Proposed Development will avoid Main Rivers that support fish and these will be retained and suitably buffered (see **Table 8-13**). The construction of the Proposed Development will be offset (>10m) from any peripheral watercourses, as detailed in the embedded design mitigation (see **Table 8-13**) and these offsets will prevent disturbance to aquatic habitats supporting fish. Cable crossings under Main Rivers will be installed by non-intrusive techniques (HDD), with no access proposed over these Main Rivers. Embedded mitigation measures (see **Table 8-13**) formalised in the **Framework CEMP [EN010154/APP/7.7]** includes HDD at a minimum of 5m below the bed of the watercourse, avoiding key fish migration seasons unless the depth of the HDD is confirmed to be of a sufficient distance of approximately 10-15m below the riverbed to avoid noise and vibration effects. Where Ordinary Watercourses and ditches are crossed for cabling or access, crossing points will be designed to allow continued connectivity and fish passage along the watercourse, with a natural bed and no drop inlet or outlet. With the implementation of	Yes

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		embedded and essential mitigation measures, as presented in **Table 8-13** there will be no species mortality during construction of the Proposed Development.	
		Operation and Maintenance: There will be no habitat loss or degradation, during operation and maintenance of the Proposed Development that could affect fish. There are potential effects on fish and other aquatic fauna due to electromagnetic fields (EMF) from cables buried beneath watercourses. Such artificial EMF can disrupt migratory cues and predatory behaviour. It is considered, based on literature review and consideration of the strength of EMF from buried cables for the Proposed Development, that 5m depth beneath the riverbed of the River Witham and River Brant is sufficient depth to avoid impacts. EMF levels at this distance would be almost imperceptible (around 3 microteslas, or lower if the cables are installed in bedrock), with any fish also being directly above the buried cables for only a very short duration. The effects of EMF from cables buried <5m in depth beneath smaller/minor watercourses for the Proposed Development will be negligible in the wider context of the watercourses and are therefore not significant.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. As described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**, buried cables would either be removed or left *in situ*. The current practice is to remove cables (leaving the ducting in place), as this avoids disturbance to overlying land and habitats, the cabling can be removed by opening up the ground at regular intervals and pulling through to an extraction point, avoiding the need to open up the entire length of the Cable Corridor. Therefore, it should be possible to avoid disturbance to watercourses and thus any impact pathways to fish. Additional measures	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		to remove impacts to aquatic habitats includes retention and avoidance of habitats and pollution (e.g. spillages, noise, light) control.	
Terrestrial invertebrates	Low	**Construction**: The construction of the Proposed Development will retain the majority of habitats of greater importance to terrestrial invertebrates, such as woodland, swamp, ditches, and hedgerows. The Proposed Development will be offset from such habitats and the embedded mitigation measures (see **Table 8-13**) are formalised in the **Framework CEMP [EN010154/APP/7.7]** and include (where practicable) protection of retained habitats (through fencing) and pollution prevention (such as dust suppression) to ensure the integrity of retained habitats are not adversely affected and that there are no impact pathways to terrestrial invertebrates.	No
		Operation and Maintenance: During operation of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, lighting or visual)), that could affect habitats supporting terrestrial invertebrates. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon retained habitats during operation of the Proposed Development that would lead to impact pathways to terrestrial invertebrates.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats of potentially greater importance to terrestrial invertebrates (such as woodland, hedgerows, ditches) and vegetation clearance undertaken in a sensitive manner.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
Grass Snake / Common Toad	Low	**Construction**: Grass Snake were recorded within the Principal Site in grassland habitats, bordering woodland edge close to Tunman Wood and in grassland habitat to the west of the River Brant. These habitats and other marginal grassland habitats close to watercourses across the Principal Site (which may also support Grass Snake) are of value to Grass Snake and will be retained and avoided through the buffering of other habitats, such as 15m undeveloped setbacks from woodland and 10m setbacks from watercourses. Pre-construction, all such habitats, known to support Grass Snake or with potential to support Grass Snake will, where practicable, be cleared in a sensitive manner as per the embedded mitigation measures (see **Table 8-13**) and formalised in the **Framework CEMP [EN010154/APP/7.7]**, to ensure that no mortality occurs as reptiles will be displaced into adjacent habitats and away from construction activities. For the Cable Corridor, sensitive vegetation clearance, under the assumption of the possible presence of transitory reptiles in suitable habitat (and of known Common Toad presence), will be adopted to displace reptiles and amphibians into adjacent habitats and ensure no mortality occurs. Therefore, there are no impact pathways, either directly or indirectly, that would negatively impact upon reptiles.	No
		Operation and Maintenance: During operation of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, lighting or visual)), that could affect habitats supporting Grass Snake or Common Toad. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon retained habitats during operation of the Proposed Development that would lead to impact pathways to reptiles or amphibians. Maintenance of grassland habitats beneath and between Solar PV Panels (as detailed in the **Framework LEMP** of this ES **[EN010154/APP/7.15]**) is expected to be undertaken via sheep grazing methods, but if this activity is undertaken via mechanical	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		mowing, where these habitats potentially support Grass Snake or Common Toad, there is potential to impact upon these species through mortality. However, this activity is expected to be undertaken either in winter months (November to February) or at an appropriate time of year for the sensitive management of grassland (i.e. late summer/early autumn when temperatures are >10°C) when reptiles and amphibians are active and can move away to avoid incidental injuring or killing, concordant with the requirements for other species, such as nesting birds.	
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include retention and avoidance (where practicable) of habitats potentially supporting reptiles and Common Toad (such as woodland, hedgerows, ditches) and vegetation clearance undertaken in a sensitive manner.	No
Breeding birds – general breeding bird assemblage, specially protected bird species and ground-nesting birds	Up to Medium	**Construction**: Habitats supporting the majority of breeding bird species throughout the DCO Site, such as the majority of hedgerows, ditches and all woodland areas, will be retained and buffered with undeveloped margins around such features embedded in the design (see **Table 8-13**) and formalised in the **Framework CEMP [EN010154/APP/7.7]**. There will be no loss of habitat used by specially protected bird species. However, the construction of the Proposed Development will lead to the temporary loss of arable habitat, used by ground-nesting breeding bird species such as Skylark and Lapwing. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** include protection of retained habitats, avoidance of vegetation clearance during the nesting bird period (typically this is March to August inclusive), pre-construction nesting bird checks and pollution prevention to ensure the integrity of retained habitats supporting breeding birds is not adversely	Yes – on ground-nesting birds

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		affected and that there is no fragmentation of habitats, or of populations of species using habitats and no species mortality of any breeding bird species.	
		Operation and Maintenance: During operation of the Proposed Development, there will be no habitat loss or disturbance to habitats (such as through noise, lighting or visual), that could affect habitats supporting breeding birds. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur upon retained habitats during operation of the Proposed Development that would lead to impact pathways to breeding birds. As presented in the **Framework LEMP** of this ES **[EN010154/APP/7.15]**, maintenance of grassland habitats beneath and between Solar PV Panels is expected to be undertaken via sheep grazing methods, but if this activity is undertaken via mechanical mowing and during the bird breeding season (typically March to August inclusive), there is potential to impact upon these species through mortality. Where mechanical mowing is required, this activity is expected to be undertaken between September and February, which is outside of the bird breeding season, to avoid incidental injuring or killing of breeding birds, concordant with the requirements for other species, such as reptiles. Any maintenance of hedgerows or trees within the DCO Site will be undertaken outside of the bird breeding season and between September to February. However, pre-commencement checks will be required where any unexpected maintenance is required during the bird nesting season. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon breeding birds during operation and maintenance of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Requirements. These measures include protecting retained habitats, avoidance of the nesting bird period (typically this is March to August inclusive), pre-construction nesting bird checks and pollution prevention.	
Non-breeding birds	Up to Medium	**Construction**: The retention and setbacks from habitats such as woodland, hedgerows (except for minor loss of small sections), ditches, and other habitats, that support the majority of non-breeding bird species will remove the potential impact pathways to non-breeding birds using these habitats as much as is practicable. Whilst there will be loss of arable habitat within the Principal Site, used by farmland bird species such as Skylark, the phased approach to construction (over 24 months) and retention and creation of habitats (see **Figure 8-5: Bird Mitigation Land Allocation** of this ES **[EN010154/APP/6.2]**) will mean that there will be no complete loss of available habitat within the Principal Site and therefore no impact pathways to non-breeding birds. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** and include protection of retained habitats and pollution prevention, will ensure the integrity of retained habitats supporting non-breeding birds is not adversely affected and that there is no fragmentation of habitats, or of populations of species using habitats and no species mortality of any non-breeding bird species. Therefore, there are no impact pathways, either directly or indirectly, that would negatively impact upon non-breeding birds.	No
		Operation and Maintenance: During operation of the Proposed Development, there will be no habitat loss or disturbance to habitats (such as through noise, lighting or visual), that could affect habitats supporting non-breeding birds. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon retained habitats during operation of the Proposed Development that would lead to impact pathways to non-breeding birds.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Any maintenance of retained habitats potentially supporting non-breeding birds, such as mowing of grassland beneath and between Solar PV Panels, is not considered to have any impact on non-breeding birds as foraging and roosting resources will be largely retained. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon non-breeding birds during operation and maintenance of the Proposed Development.	
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include protecting retained habitats and pollution prevention.	No
Bats (foraging / commuting and roosting)	Medium	**Construction**: The Proposed Development avoids features used by commuting / foraging and roosting bats, such as woodland and mature trees. There is some minor temporary short-term hedgerow loss for the Cable Corridor, new fence lines and access that is unlikely to adversely affect bats. This is unlikely to result in a loss of important habitats used by bats within the DCO Site during construction. However, if it is identified that any features are likely to be directly impacted further, more detailed bat roost surveys will be required for detailed design at specific features (i.e. structures and trees with roost suitability) to inform mitigation and a potential licence application in accordance with good practice guidance. Where construction works are undertaken within these buffer zones, there may be indirect impacts to roosts/potential roosts. However, these impacts would be avoided through use of a precautionary working method statement and the embedded mitigation measures presented in **Table 8-13** and formalised in the **Framework CEMP [EN010154/APP/7.7]**. Embedded measures include protection of retained habitats, avoidance of important habitats to roosting bats, pre-construction checks and pollution	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		prevention (including for lighting). These measures will ensure the integrity of retained habitats supporting, or potentially supporting, roosting bats is not adversely affected and that there is no fragmentation of habitats, or of populations of species using habitats and no species mortality of any bat species. Consequently, indirect effects to habitats supporting bats during construction will be avoided and there are no impact pathways, either directly or indirectly, that would negatively impact upon roosting or commuting / foraging bats.	
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there will be no habitat loss or disturbance to habitats (such as through noise, water quality, lighting or visual) that could affect commuting or foraging bats. Any maintenance of retained habitats potentially supporting bats (such as hedgerows and trees) is not expected. Recent research has suggested that numbers of foraging bats may be reduced by the presence of Solar PV Panels. This found that bats avoided fields with solar panels during operation and that total bat activity was almost halved at the boundaries of solar panel fields compared to that of control sites and at the centre of solar panel fields, bat activity dropped by two-thirds (Ref 8-93). The reasons for these impacts were not fully determined, but it should be noted that these sites did not have any significant new tree/ hedge planting, and/ or grassland creation and may not be comparable to the Proposed Development (and other large-scale DCO schemes) where significant areas of habitat compensation and enhancement are provided. Habitat compensation and enhancement including 64 ha of permanent grassland, restored ponds, new hedgerow, scrub and tree planting are included within the **Framework LEMP [EN010154/APP/7.15].**	Yes
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include avoidance of the majority of habitats potentially supporting bats (such as woodland, hedgerows), pre-commencement checks and pollution prevention.	
Riparian mammals	Medium	**Construction**: There will be no construction of the Principal Site within 10m of the bank-top of any watercourse anywhere within the DCO Site, including the River Witham where Water Vole were recorded. Where the Cable Corridor crosses the River Witham, the setback will be extended to 100m from the river in recognition of Otter activity in this area and no construction will be undertaken outside of daylight hours and avoiding the periods of 1-2 hours before / after sunset and sunrise (dependent on the time of year). Main Rivers (the River Witham and River Brant), where Otter and Water Vole were recorded, will be avoided with cable crossings installed by non-intrusive techniques (HDD), no access proposed over these Main Rivers and appropriate setbacks (see **Table 8-13**) from the bank-top of the river to protect riparian habitats. The construction of the Cable Corridor and any internal access across the DCO Site, where this crosses watercourses, will utilise non-intrusive methods to avoid physical disturbance to the watercourse, therefore avoiding disturbance to species, habitat loss and direct mortality for riparian mammals. Embedded mitigation measures (see **Table 8-13**) are formalised in the **Framework CEMP [EN010154/APP/7.7]** and includes avoidance (where practicable) of watercourses, protection of retained habitats and pollution prevention to ensure the integrity of retained habitats is not adversely affected and that there are no impact pathways that could affect riparian mammals.	No
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there will be no habitat loss or disturbance to habitats (such as through noise, water quality or lighting) that could affect riparian mammals. No maintenance is	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		expected on watercourses or riparian habitats. However, pre-commencement checks will be required where any unexpected maintenance is required on watercourses, details of which are included within the **Framework OEMP [EN010154/APP/7.8]**. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon aquatic habitats supporting riparian mammals during operation of the Proposed Development. Therefore, there are no impact pathways, either directly or indirectly, that would negatively impact upon riparian mammals.	
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. As described in **Chapter 3: The Proposed Development [EN010154/APP/6.1]**, buried cables would either be removed or left *in situ*. The current practice is to remove cables (leaving the ducting in place), as this avoids disturbance to overlying land and habitats, the cabling can be removed by opening up the ground at regular intervals and pulling through to an extraction point, avoiding the need to open up the entire length of the Cable Corridor. Therefore, it should be possible to avoid disturbance to watercourses, which will avoid any impact pathways to riparian mammals. Additional measures to remove impacts to aquatic habitats supporting riparian mammals will include retention and avoidance of habitats and pollution (e.g. spillages, noise, light) control.	No
Badger	Low	**Construction**: The construction of the Proposed Development will retain and avoid Badger setts recorded within the DCO Site.	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** includes protecting retained habitats supporting Badger (and their setts, including appropriate no-development areas around their setts), pre-construction surveys to identify Badger sett locations and pollution prevention will ensure the integrity of retained habitats supporting Badger are not adversely affected and that there is no fragmentation of habitats, or of Badger clans and that no species mortality occurs. Therefore, there are no impact pathways, either directly or indirectly, that would negatively impact upon Badger.	
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there will be no habitat loss or disturbance to habitats (such as through noise, water quality or lighting) that could affect Badger. Any maintenance of retained habitats potentially supporting Badger (such as woodland or hedgerows) is not expected. However, pre-commencement checks will be required where any unexpected maintenance is required within 30m of known Badger setts or within habitats potentially supporting Badger, details of which are included within the **Framework OEMP [EN010154/APP/7.8]**. Furthermore, the management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon habitats potentially supporting Badger during operation of the Proposed Development. Therefore, there are no impact pathways, either directly or indirectly, that would impact upon Badger during operation and maintenance of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO	No

IEF	Importance (see Section 8.5 and Table 8-5~~Table 8-5~~)	Potential impact pathways (see Section 8.9)	Potential for an effect to occur?
		Requirements. These measures include pre-commencement checks, pollution control and retention and avoidance of habitats supporting Badger (and including their setts).	
Other mammals (Brown Hare, Hedgehog and Harvest Mouse)	Low	**Construction**: The construction of the Proposed Development will retain and avoid the majority of habitats used by Brown Hare, Hedgehog and potentially Harvest Mouse within the DCO Site, such as woodland, scrub and hedgerows. Embedded mitigation measures (see **Table 8-13**), formalised in the **Framework CEMP [EN010154/APP/7.7]** includes protecting retained habitats, pre-construction surveys, sensitive timing of vegetation clearance and pollution prevention will ensure the integrity of retained habitats are not adversely affected and that there is no fragmentation of habitats, or of populations of species and that no species mortality occurs.	No
		Operation and Maintenance: During operation and maintenance of the Proposed Development, there are no pathways (e.g. habitat loss or disturbance to habitats (such as through noise, lighting or visual)), that could affect these SPI mammals. Any maintenance of retained habitats potentially supporting Badger (such as woodland or hedgerows) is not expected. The management of surface water, including for PV array runoff, BESS runoff and foul water drainage (see also **Chapter 9: Water Environment** of this ES **[EN010154/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon habitats potentially supporting these during operation of the Proposed Development.	No
		Decommissioning: Decommissioning impacts are expected to broadly align with those for construction and would require mitigating fully in line with relevant legislative and policy requirements at the time of decommissioning. Initial measures are included within the **Framework DEMP [EN010154/APP/7.9]**, secured as part of the DCO Requirements. These measures include pollution prevention and the retention and avoidance of habitats of greatest important to these species (such as woodland, scrub and field margins), where practicable.	No

8.12 Significance of Effects (with avoidance and embedded mitigation measures)

8.12.1 The significance of effects (both beneficial and adverse) associated with the construction, operation (including maintenance) and decommissioning of the Proposed Development are presented in the following sections, using the method detailed in **Section 8.5** and in consideration of the potential impacts described in **Section 8.9** and embedded mitigation measures outlined in **Section 8.10** of this Chapter.

8.12.2 The aim of the assessment in **Section 8.11** was to identify potentially significant effects and determine the need for additional mitigation measures to those detailed in **Section 8.10** of this Chapter.

8.12.3 Accordingly, that assessment has identified the following potential impacts on IEFs during construction and operation and maintenance that have been taken forward for further assessment.

Construction

8.12.4 Accordingly, the evaluation has identified that during construction, per the screening assessment in **Section 8.11**, there are potential impact pathways on the following IEFs, which are assessed in more detail further on in this Chapter:

a. Temporary loss of habitat associated with Navenby, Green Man Road Verges LWS, which is within the Cable Corridor;

b. Temporary loss of and fragmentation of *Deschampsia* neutral grassland to facilitate the Interconnecting Cable Corridor;

c. Temporary loss of and fragmentation of Main Rivers (including Ditches) within the DCO Site;

d. Permanent loss of Cropland – arable field margins, including scarce arable flora species.

e. Permanent loss of Cropland – arable fields with pollen and nectar and, or, wild bird mix within the Principal Site;

f. Temporary loss of hedgerows (including scrub habitats) within the DCO Site; and

g. Loss of habitat used by ground-nesting birds within the Principal Site.

Temporary loss of habitat associated with Navenby, Green Man Road Verges LWS, within the Cable Corridor

8.12.5 The construction of the Cable Corridor will directly impact upon habitats within Navenby, Green Man Road Verges LWS to facilitate access. The working corridor has been reduced as much as is practicable to approximately 30m and has been designed to avoid trees. Standard environmental protection measures (as presented in **Table 8-13)** will be implemented during construction of the Proposed Development to prevent indirect impacts occurring to habitats outside of the working areas.

8.12.6 The roadside verges, which includes Navenby, Green Man Road Verges LWS, are approximately 2m wide and are classified as the non-priority habitat type of other calcareous grassland. In addition, surveys of the grassland (see **Appendix 8-B: Terrestrial Habitats and Notable Flora** of this ES **[EN010154/APP/6.3]** identified that a narrow strip of the verges, (approximately 0.75m wide) nearest the road was regularly mown and in general, the habitat within the LWS was in poor condition with nutrient enrichment, vehicle damage and encroaching scrub from the adjacent hedge. The section of verge proposed for temporary access is therefore of limited floristic diversity (compared to other sections of the LWS) and subject to regular disturbance and degradation from over-running vehicles and road/agricultural run-off.

8.12.7 Whilst the proposed access will be temporary and removed post-construction, Navenby, Green Man Road Verges LWS is identified as being part of the high-quality ecological network within the GLNP Biodiversity Opportunity Mapping (Ref 8-34). Therefore, to limit the potential impacts to the LWS, vegetation clearance to facilitate the access will ensure that turves will be taken for the working area and stored, managed, monitored and watered as needed, until they can be replaced in the verge. Underlying verge topsoils and subsoils will also be stripped and stored off the LWS in adjacent fields (separately to soil from the fields), to retain the original soil profile and seed bank. Once construction is completed, the temporary access will be removed and the top and subsoil from the LWS will be backfilled. The turves will then be replaced appropriately. These measures are included in the **Framework CEMP [EN010154/APP/7.7].**

8.12.8 In addition, it may be possible to supplement the re-instated areas with seed collected from more diverse sections of the LWS, offering the opportunity to enhance these sections of the LWS, to a calcareous grassland community more representative of that identified in the LWS description and restore the LWS to a more favourable condition.

8.12.9 Taking into account the embedded and standard mitigation measures (see **Table 8-13**), the temporary land-take required to install the Cable Corridor (which will be restored post-construction), the magnitude of this impact (see **Table 8-16**) has been assessed as **Low**, which results in a temporary minor adverse effect, that is **not significant** in EIA terms.

Temporary loss of and fragmentation of *Deschampsia* neutral grassland to facilitate the Interconnecting Cable Corridor

8.12.10 The construction of the Cable Corridor will be via trenched method which will lead to a temporary loss of a narrow corridor within this area. The habitat in this location has been regularly disturbed in the past through grazing and can readily be recreated through natural regeneration and/or supplementary seeding from the adjacent grassland and appropriate management.

8.12.11 Embedded mitigation measures (see **Table 8-13**), formalised in the Framework CEMP [EN010154/APP/7.7] will ensure there are no other impact pathways that will affect the integrity or functioning of this habitat, including

ensuring appropriate buffers from construction adjacent to this habitat and pollution control to preserve the integrity and functioning of this habitat.

8.12.12 Taking into account the embedded and standard mitigation measures (see **Table 8-13**), the temporary land-take required to install the Cable Corridor (which will be restored post-construction), the magnitude of this impact (see **Table 8-16**) has been assessed as **Low**, which results in a temporary minor adverse effect, that is **not significant** in EIA terms.

Temporary loss of and fragmentation of Main Rivers (including Ditches) within the DCO Site (and also including aquatic macrophytes and macroinvertebrates)

8.12.13 The construction of the Proposed Development is predicted to temporarily impact upon running water habitats (which in turn will impact aquatic macrophytes and macroinvertebrates), although the exact construction methods and watercourses affected are not known, but the River Witham and River Brant will not be directly or indirectly impacted through the evolution of the design and embedded avoidance and mitigation measures (see **Table 8-13**). Taking these measures into account, which includes setbacks of 10m from the banktops of watercourses; the buried depth of any cabling (a minimum of 2m below minor/ordinary watercourses (except where minor/ordinary watercourses have minimal or no water flow and water management is easily managed) and 5m beneath main rivers); and the temporary land-take required to install any crossing points over watercourses, the magnitude of any temporary loss of running water habitat (which will be restored post-construction) has been assessed as **Low**, which results in a temporary minor adverse effect, that is **not significant** in EIA terms as it does not affect the overall resource of running water present within the DCO Site or the integrity of any particular watercourse.

Permanent loss of Cropland – arable field margins and arable fields with pollen and nectar and, or, wild bird mix within the Principal Site

8.12.14 Construction activities are predicted to result in the permanent loss of the majority of arable field margins with scarce arable flora and loss and fragmentation of cropland (arable fields with pollen and nectar and, or, wild bird mix) within the Principal Site. Areas of cropland will be retained, particularly the arable margins, as much as is practicable, buffered and their quality improved through positive management, however the majority of this habitat will be lost. This habitat is readily re-created within arable field margins, through management such as annual cultivation and arable fields with pollen and nectar and, or, wild bird mix as set out in the **Framework LEMP [EN010154/APP/7.15]**. These habitats will be managed through annual cultivation to provide suitable conditions for arable flora to grow. Specific mitigation for the scarce arable flora species in the fields of national and county importance (AF17, AF29 and AF72) will also be provided as presented in the **Framework LEMP [EN010154/APP/7.15]**. This will include seed collection, where possible and long-term management of arable fields and margins. New areas of pollen and nectar and, or, wild bird mixes will be provided within non-developed areas.

8.12.15 Retained arable field margins present within the DCO Site will be protected during construction, as the setbacks from watercourses (10m undeveloped area) and boundary habitats (such as 5m from hedgerows) will likely overlap with and include arable field margins, as set out in the **Framework LEMP [EN010154/APP/7.15]**.

8.12.16 Taking into account the embedded and standard mitigation measures (see **Table 8-13**), the land-take required, the magnitude of this impact (see **Table 8-16**) has been assessed as **Low**, which results in a minor adverse effect, that is **not significant** in EIA terms.

Temporary loss of hedgerows and scrub within the DCO Site

8.12.17 Construction activities are predicted to result in the temporary loss of sections of hedgerow and scrub (minimised as much as is practicable) as a result of fences and access routes across the DCO Site and to facilitate the Cable Corridor. Whilst the extent of any loss of this habitat is yet to be defined, the majority of hedgerows across the DCO Site will be avoided and any replanting required has been embedded within the design of the Proposed Development as shown within the **Framework LEMP [EN010154/APP/7.15]**. It is noted that this may take time to develop and therefore, there is likely to be a temporary (medium-term) adverse effect on this habitat type in some areas until new planting is established. Lengths of new, species rich, hedgerow and areas of scrub would be planted to compensate for any loss, using three core species: Hawthorn, Blackthorn and Field Maple with others to add diversity including: Oak, Hornbeam, Holly *Ilex aquifolium*, Hazel, Spindle, Crab Apple *Malus sylvestris*, Elder, Dogwood *Cornus sanguinea*, and English Elm* *Ulmus procera* (*a disease resistant cultivar). Once hedgerows establish along with additional hedgerow planting proposed across the DCO Site, it is predicted that the Proposed Development will be able to deliver a net gain in this habitat and the overall impact will be beneficial.

8.12.18 Taking into account embedded protection measures and Proposed Development design to minimise the impact of construction activities causing direct loss of small sections of hedgerows, it is assessed that the magnitude of this impact is **Low**, which results in a temporary minor adverse effect, that is **not significant** in EIA terms as it does not affect the overall hedgerow resource present within the DCO Site or the integrity of any particular hedgerow.

Loss of habitat used by ground-nesting birds within the Principal Site

8.12.19 The survey of breeding birds (see **Appendix 8-G: Breeding Birds of this ES [EN010154/APP/6.3]**) identified 227 territorial Skylark and 22 territories of Lapwing present across the Principal Site, with Skylark recorded in the vast majority of arable fields and Lapwing recorded in loose colonies to the north and south of the A46. The prevalent arable crop type within the Principal Site is autumn sown Wheat, with occasional fields of Barley and Maize. Autumn sown cereals (and other crops) are now a typical feature of the arable environment and, whilst suitable in early spring (April) for ground-nesting birds, the suitability of this crop type for nesting can quickly reduce, with the crop becoming too tall as well as being prone to frequent disturbance through

spraying. Dependent on conditions, earlier harvesting in May can result in nest loss, as well as an overall reduction in the number of broods and/ or nesting attempts.

8.12.20 As ground-nesting birds in arable habitats are particularly susceptible to nest failure or low fledgling success (in part due to autumn sown cereals), through predation and lower abundances of invertebrate food, than say natural unimproved grasslands (causing adults to forage over greater distances), any reduction in brood numbers can consequently reduce the productivity of the local population. Whilst 227 territorial Skylark were recorded from surveys of the Principal Site, it is not possible or practicable to search for active nests, nor is this required for territory mapping analysis and so the number of active nests or indeed breeding attempts or successful fledgling is unknown. Indicatively, for Lapwing, whilst 22 territorial birds were recorded in early spring 2024, most of these were unsuccessful in raising young to fledging and had departed by mid-May 2024. Therefore, whilst the number of territories of these species provides an idea of the overall potential habitat resource, it is not necessarily a good indicator for assessing the quality of that habitat and its overall productivity for the population. The dominance of arable habitats within the Principal Site, such as autumn sown Wheat, would indicate that the number of successful broods and/ or breeding attempts, e.g. for Skylark, is likely to be low (Ref 8-92), which in turn is likely to result in low productivity and juvenile recruitment into the local breeding population.

8.12.21 It is acknowledged that construction activities will result in the loss of arable farmland used by breeding ground-nesting birds. Without measures providing suitable nesting and foraging habitats being incorporated within the Proposed Development there is the potential for a long-term effect on a population of Skylark and Lapwing important at a District (Medium sensitivity) level.

8.12.22 However, the design of the Proposed Development has evolved to include sufficient areas of undeveloped land (64ha of permanent grassland and 181ha of retained arable as presented in **Figure 8-5: Bird Mitigation Land Allocation** of this ES **[EN010154/APP/6.2]**) and secured in the **Framework LEMP [EN010154/APP/7.15].** that will be utilised for habitat creation and enhancement to offset the impact of loss of arable farmland for breeding ground-nesting birds as well as provide extensive benefits for other IEFs and wider biodiversity. Management of these areas will ensure that the sward does not exceed 60cm and any management activities are restricted for the full extent of the breeding season (typically March to August inclusive), allowing for the maximum number of breeding attempts for each species and an increase in productivity. Furthermore, management on retained arable areas will include:

a. Continuation of crops as currently used for Maize, Barley or Wheat (on rotation) and annually, within these fields, Skylark plots will be created at a rate of 2 per ha, comprising a small uncropped/fallow area at least 3m wide and between 16 and 24m2 in area (e.g. 4 x 4m). In each field, the plots will be created as groups a minimum of 25m between the plots and at least 50m from the field boundary.

b. Skylark plots will be created by one of the following: a. Turning off the drill during sowing to leave an unsown plot; or b. Sowing the crop as normal and spraying with a herbicide to create the plot by 31 December. Harvesting should not take place until August, at the earliest. Note, if spring sown cereals are included then the need for skylark plots may be removed.

c. Annually one field within retained arable areas will be left as fallow (with no Skylark plots), specifically to encourage nesting Lapwing. This will be cultivated with tines or discs in as short a time as possible, between 1st and 20th of March in the respective year to provide attractive ground for prospecting Lapwings and avoid subsequent damage to nests. Lapwing prefer very short or no vegetation. Bare ground on more than 90% of the area will probably not be too short for them to nest. The fallow will be maintained until 31st July or later so Lapwing can continue to use these areas for nesting.

8.12.23 Wide grassland margins (5m from hedgerows, 10m from watercourses and 15m from woodland) alongside undeveloped corners of fields will also enhance foraging for Skylark nesting both onsite and offsite and to allow for an element of displacement from the Proposed Development and absorption into neighbouring habitats.

8.12.24 Further to this, to reduce predation from ground predators (particularly for Lapwing), in areas where existing woodlands and mature hedgerows may provide attraction to predators, the perimeter security fencing will not contain passages for mammals, as is proposed elsewhere throughout the Proposed Development, which will reduce nest predation.

8.12.25 Whilst the above measures will not provide like for like mitigation for all territorial Skylark and Lapwing recorded, the provision of a stable quantity of improved quality habitat that is not subject to agricultural rotations, pesticide application or early harvesting, in combination with measures to reduce predation, will likely increase both nesting densities and productivity over the lifespan of the Proposed Development (60 years).

8.12.26 With the application of the mitigation measures set out above, the magnitude of habitat loss for ground-nesting birds is reduced to **low**, resulting in a minor adverse effect which is **not significant** in EIA terms.

Summary of Magnitude of Impact and Significance of Effect

8.12.27 **Table 8-16** summarises the sensitivity (value) of IEFs, impacts and effects resulting from construction of the Proposed Development, including whether there is potential for significant effects.

Table 8-16: Summary of Magnitude of Construction Impacts and Significance of Effect

IEF	Sensitivity (Value)	Description of impact	Magnitude of impact	Effect category	Potential for a significant effect?
Navenby, Green Man Road Verges LWS	Medium	Temporary loss of small section of habitat within the LWS.	Low	Minor adverse	No
Deschampsia neutral grassland	Low	Temporary loss of and fragmentation of *Deschampsia* neutral grassland.	Low	Minor adverse	No
Main Rivers (including Ditches)	Medium	The construction of the Proposed Development is predicted to temporarily impact upon running water habitats (where non-intrusive crossings are not possible) which in turn will lead to temporary fragmentation of running water, although the exact construction methods are not fully defined.	Low	Minor adverse	No
Cropland – arable field margins	Up to High	Permanent loss of arable field margins with scarce arable flora.	Low	Minor adverse	No
Cropland – arable fields with pollen and nectar and, or, wild bird mix	Medium	Permanent loss of and fragmentation of arable fields with pollen and nectar and, or, wild bird mix within the Principal Site.	Low	Minor adverse	No
Hedgerows	Medium	Temporary loss of small sections of hedgerows within the DCO Site.	Low	Minor adverse	No

IEF	Sensitivity (Value)	Description of impact	Magnitude of impact	Effect category	Potential for a significant effect?
Breeding birds – ground-nesting birds	Up to Medium	There will be habitat loss across the Principal Site which will lead to the loss of habitat used by ground-nesting birds.	Low	Minor adverse	No

Operation and Maintenance

8.12.28 The assessment has identified that during the operation and maintenance of the Proposed Development, the following potential impacts on IEFs have been taken forward for further assessment:

a. displacement of foraging/commuting bats by the presence of Solar PV Panels.

8.12.29 There is limited scientific literature available on the impacts to bats from solar farms (Ref 8-94, Ref 8-95, Ref 8-96 and Ref 8-97). The first large scale NSIP solar scheme (Cleve Hill in Kent) received planning consent in May 2020 (Ref 8-97) and is not yet operational, so it is too early to fully predict long-term effects on bat populations arising from large-scale solar schemes.

8.12.30 A recent study in 2019 and 2020 on 19 small solar schemes in the south west of England (Ref 8-93) found that bats avoided fields with solar panels during operation. Total bat activity was almost halved at the boundaries of solar panel fields compared to that of control sites and at the centre of solar panel fields, bat activity dropped by two-thirds. The reasons for this have not been fully determined but the paper suggests that solar panels could, in theory, inadvertently reduce the abundance of insects by lowering the availability of the plants they feed on. Solar panels may also reflect a bat's echolocation calls, making insect detection more difficult. Reduced feeding success around the panels may result in fewer bats using the surrounding hedgerows for commuting, potentially explaining the findings.

8.12.31 It should be noted that these sites did not have any significant new tree/hedge planting, and/or grassland creation and may not be comparable to the Proposed Development (and other large-scale DCO schemes) where significant areas of habitat compensation and enhancement are provided. All the small solar sites in the study were on grassland that was either grazed or managed through mowing or were on cut arable crops and therefore the avoidance behaviour observed by bats may be different to the Proposed Development, where the embedded mitigation (see **Table 8-13**) and proposed habitat creation will include large areas of grassland managed for conservation, habitat buffers, pond restoration and new tree and hedge planting.

8.12.32 Taking into account embedded mitigation measures that includes providing large areas of permanent grassland suitable for foraging bats and sets back panel arrays from all important habitats used by foraging bats, i.e., hedgerows and woodlands, there is no robust data to suggest that, with the embedded mitigation measures set out in **Table 8-13**, displacement of bats from these habitats will occur. As such, it is assessed that the magnitude of this impact is **Low**, which results in a negligible effect, that is **not significant** in EIA terms as will not affect the overall bat populations present within the DCO Site and will not affect the integrity of any particular bat species population.

8.12.33 **Table 8-17** summarises the preliminary sensitivity (value) of IEFs, impacts and effects resulting from operation and maintenance of the Proposed Development that are predicted at this stage.

Table 8-17: Summary of Magnitude of Operation and Maintenance Impacts and Significance of Effect

IEF	Sensitivity (value)	Description of impact	Magnitude of impact	Effect category	Potential for a significant effect?
Bats	Medium	There is the potential for commuting, foraging and roosting bats to be displaced from the DCO Site from Solar PV Panels. Taking into account the embedded mitigation measures set out in **Section 8.10**, that includes providing large areas of permanent grassland suitable for foraging bats and a design which sets back the Solar PV Panels from all important habitats used by foraging bats, i.e. water bodies, hedgerows and woodlands, the findings from research at small operational solar sites are not considered comparable with the careful design configuration of the Proposed Development. As such, no adverse effect on the overall bat populations present within the DCO Site or integrity of any particular bat species population is predicted.	Low	Negligible	No

Decommissioning

8.12.34 At this stage, the effects of decommissioning of the Proposed Development are likely to be similar to those for construction, but with recognition that many of the potential impacts associated with the creation of internal accesses will not be relevant during decommissioning.

8.12.35 Where reasonably practicable, important habitats, present at the time of decommissioning will be retained and any impacts will be mitigated fully in line with relevant legislative and policy requirements in place at the time of decommissioning. It is anticipated that the existing protected species legislation would remain in place, or that any replacement legislation will offer the same level of protection. The assessment of effects at construction presented in **Table 8-16**, is therefore also considered to represent decommissioning effects.

8.12.36 Upon decommissioning, the above-ground physical infrastructure within the Principal Site (e.g., solar PV panels, Field Stations and the Field Station Units/Substations) will be removed. Where hardstanding has been created, this will be removed and the original soil profile reinstated (using stockpiled site-won soils) returning the land to its predevelopment condition. It is noted that mode of cable decommissioning for the Grid Connection and Interconnecting Cables will be dependent upon government policy and best practice at that time of decommissioning. It is common practice for such infrastructure to be retained and used for another purpose after the development they were originally installed to support is decommissioned.

8.12.37 It is therefore anticipated that the majority of the Principal Site could be returned to its original use and condition after decommissioning, although post-development land use (for instance re-establishment of arable use) would be up to the individual landowners.

8.12.38 Measures to be put in place expected to be appropriate to the legislative and policy requirements at the time of decommissioning, are included within the **Framework DEMP [EN010154/APP/7.9].** A detailed DEMP be prepared and agreed with the relevant authorities at that time of decommissioning, in advance of the commencement of decommissioning works, in accordance with the relevant Requirement in Schedule 2 of the DCO.

8.13 Additional Mitigation and Enhancement Measures

8.13.1 The assessment presented in **Section 8.11** of this Chapter identified no significant effects on IEFs, as summarised in **Section 8.12**. Habitat creation and enhancements have been included within the Proposed Development design to increase biodiversity. Whilst a number of these will minimise the landscape and visual impacts, they will also provide landscape-scale benefits for biodiversity through the increase in habitat availability and connectivity for a wide range of fauna.

8.13.2 Therefore, no additional mitigation is required, and this section only presents habitat creation and enhancements that are included with the Proposed Development design to provide enhancements for biodiversity, as presented in Annex A of the **Framework LEMP [EN010154/APP/7.15]**.

8.13.3 The Proposed Development is committed to deliver BNG in line with the Requirement 8 of Schedule 2 of the draft DCO. As set out in the **Biodiversity Net Gain Report [EN010154/APP/7.12]**, the Applicant has committed to deliver a minimum of 30% biodiversity net gain in habitat units, 50% biodiversity net gain in hedgerow units and 10% biodiversity net gain in watercourse units using DEFRA's Statutory Biodiversity Metric (SBM) (Version 1.0.4) for the Proposed Development.

8.13.4 The **Framework LEMP [EN010154/APP/7.15]** includes the landscaping and monitoring measures. Vegetation would be established through natural regeneration or in the case of grasslands from seed collection from the grasslands identified within the DCO Site and through a suitable long-term habitat management regime. Consideration will be paid to microclimatic conditions when identifying appropriate species. Management will be undertaken in a variety of ways to ensure maximum biodiversity gains, with grassland managed by either low intensity grazing or infrequent mowing or hay cutting to allow plant species to flower and seed.

Woodland Planting

8.13.5 Woodland planting (also referred to as buffers) and native tree belts will be established to reinforce the retained existing woodland and tree belts. These are proposed in areas too narrow to be planted as woodland but at 10m to 15m width will provide a more substantial block of planting than a hedgerow with specimen trees. Woodland buffers and native tree belts are characteristic of the existing landscape and provide ecological value, forming important wildlife corridors between existing woodlands.

Hedgerows

8.13.6 New hedgerows with trees will be established to supplement the existing, retained hedgerows with trees. These will provide a valuable habitat, forming important wildlife corridors and re-enforcing existing ones. Hedgerows will be maintained at a minimum of 3m high and 'infilled' where there are gaps in existing hedgerows.

8.13.7 Gaps in currently defunct hedges will be planted with suitable native species to improve the connectivity of habitats (such as between ancient and other broad-leaved woodland) within and adjacent to the DCO Site. New areas of tree planting around infrastructure will be provided to provide both screening from infrastructure and to improve habitat connectivity as well to increase the area of hedge / woodland habitat within the DCO Site. New scrub habitat and wider hedgerows (up to 8m wide) will be created in selected areas to provide suitable habitat for declining farmland birds such as Yellowhammer and Tree Sparrow. Hedgerows and trees will be allowed to grow tall and wide to provide maximum benefits for biodiversity and this natural regeneration will encourage

a mosaic of successional habitats, forming broad habitat corridors throughout the Proposed Development.

Scrub

8.13.8 Scrub composed of native shrubs is proposed adjacent to hedgerows to increase the shrub habitat and enhance biodiversity. This will create and maintain a diverse mosaic of scrub and grassland habitat, which includes providing shelter and food resources for birds and other wildlife.

Natural Regeneration Areas

8.13.9 An area 15m to 25m wide adjacent to existing ponds and woodland will be encouraged to naturally regenerate. There will be no routine management of these areas. Natural regeneration will further increase biodiversity and provide an opportunity to observe the gradual structural transition from grassland to canopy woodland habitats.

Species-rich Grassland and Arable Field Margins

8.13.10 Species-rich grassland will be established across the DCO Site, under the PV panels and in set aside areas. Conservation margins sown with a wild bird seed mix will also be established as well as arable margins created through locally sourced seed (where practicable) / the existing seed bank and annual cultivation. By establishing a diverse sward of grasses and herbs biodiversity will increase, enhancing value for wildlife. The wild bird seed mix in the conservation margins will provide a cover crop habitat for game birds and food source for over-wintering farmland birds such as Skylark, Linnet and Yellowhammer. The exact location and proportion of margin types within the conservation margins will be tailored to the needs of the site's biodiversity. Following best practice, the conservation margins will be 12m in width, and at least 50m in length.

Pond restoration and planting around ponds

8.13.11 Existing ponds in poor condition within the Principal Site will be restored with the aim of maximising their wildlife value. This will partly be achieved by de-silting to ensure that they remain at least partly wet during normal conditions, allowing amphibians and invertebrates to complete their life cycles. Where existing ponds are overshaded by mature trees, these trees will be prioritised for pollarding, to increase light and decrease leaf fall onto the ponds.

8.13.12 Scrub clearance and de-silting around ponds will be phased over five years, to prevent the site-wide loss of existing shaded pond habitats and to provide ponds in various stages of natural succession to provide a wider range of niches for wildlife. Water features tend to be colonised naturally; therefore, no planting is considered necessary or desirable in these areas.

Provision of Habitat Boxes

8.13.13 A range of artificial bird and bat boxes will be installed in existing woodland areas, on retained individual trees and existing trees in hedgerows to increase the availability of nesting and roosting features and enhance the value of these habitats for these species groups.

8.13.14 Bat roost boxes of varying types to suit different species of birds and bats will be installed in locations to be determined by an ecologist at the time of installation.

8.13.15 The bird and bat boxes will be made from long lasting materials (such as Woodcrete) and would be expected to have a life expectancy of 20-25 years. Given the Proposed Development's 60-year lifespan the bird and bat boxes will be replaced every 20 years, this will be secured within the LEMP.

Creation of Habitat Piles

8.13.16 Habitat piles and hibernacula will be constructed throughout the Proposed Development in suitable areas, such as close to ponds or watercourses, using natural materials generated during clearance of the site, such as logs, turf, and grass strimming. These will provide refuge and hibernation opportunities for amphibians and reptiles, as well as dead wood habitat for invertebrates, which will in turn benefit fauna such as bats and birds.

Significance of effects (with enhancement)

8.13.17 With the implementation of the measures summarised above and incorporated in the **Framework LEMP [EN010154/APP/7.15]**, secured through the DCO, the Proposed Development has the potential to generate beneficial effects for a range of the IEFs identified in **Table 8-12**. Where relevant, the impact of these is assessed, following the impact assessment criteria presented in **Section 8.5** of this Chapter and the significance of the effect outlined in **Table 8-18**.

Table 8-18: Summary of Enhancement and Significance of Effect

IEF	Sensitivity (Value)	Enhancement Measures	Magnitude of Impact	Residual Effect
Habitat –woodland and individual trees (including veteran trees)	Up to High	Natural re-generation of areas surrounding woodland within the DCO Site, along with enhanced planting, will allow the expansion of existing woodlands, as well as providing further natural buffers to existing mature woodlands. New areas of tree planting will be allowed to grow tall and wide to provide maximum benefits for biodiversity and will be created as screening from Proposed Development infrastructure, to improve habitat connectivity (for species such as bats and birds) and increase the area of hedgerow (and woodland habitat) within the DCO Site. Tree planting, however, will be avoided in any areas where there may be ecological features, such as ground-nesting birds, that require open landscapes. This will further secure the long-term future of these woodlands and is in line with the expectations of national and local planning policy.	Medium	**Moderate beneficial effect – Significant**
Habitat - Other standing water (e.g., ponds), including aquatic macroinvertebrates	Low	New habitats created by the Proposed Development will see the removal of agricultural chemicals from land parcels within the Principal Site reducing the quantity of agricultural run-off and chances of eutrophication in nearby rivers and ditches. Planting of aquatic macrophyte and riparian species to enhance water bodies and riparian/marginal habitats. Removal of selected shrub will also be done to reduce shading in the channel and promote macrophyte growth. This will further secure the long-term future of these habitats and is in line with the expectations of national and local planning policy	Medium	**Moderate beneficial effect – Significant**

IEF	Sensitivity (Value)	Enhancement Measures	Magnitude of Impact	Residual Effect
		and will have benefits for any aquatic macroinvertebrate species within such habitats.		
Habitat – Main Rivers (including Ditches), including species using them (Fish and riparian mammals)	Up to Medium	New habitats created by the Proposed Development will see the removal of agricultural chemicals from land parcels within the Principal Site reducing the quantity of agricultural run-off and chances of eutrophication in nearby rivers and ditches. This will further secure the long-term future of these habitats and is in line with the expectations of national and local planning policy and will have benefits for any species within such habitats.	Medium	**Moderate beneficial effect – Significant**
Grassland and arable field margins with scarce arable flora	Up to High	Additional grassland and conservation margins provided adjacent to and beneath the solar PV panels in the Principal Site, and larger permanent grassland field, including in arable field margin in retained arable fields, to increase the diversity of flora in comparison to existing intensive agriculture and provide new habitat niches to encourage other fauna such as invertebrates and birds. Vegetation would be established through natural regeneration or from seed collection from the arable field margins and other grasslands identified within the DCO Site and through a suitable long-term habitat management regime. Consideration will be paid to microclimatic conditions when identifying appropriate species. This will further secure the long-term future of arable field margin habitats and is in line with the expectations of national and local planning policy.	Medium	**Moderate beneficial effect – Significant**

IEF	Sensitivity (Value)	Enhancement Measures	Magnitude of Impact	Residual Effect
Hedgerows	Medium	New hedgerow planting and bolstering of existing defunct hedgerows (will be undertaken during construction of the Proposed Development and will form broad habitat corridors across the DCO Site and, during operation of the Proposed Development. This will increase connectivity across the DCO Site for species that may use such habitats (such as bats). Gaps in currently defunct hedges will be planted with suitable native species to improve the connectivity of habitats (such as between areas of broad-leaved woodland) within and adjacent to the DCO Site. Hedgerows will be allowed to grow tall and wide to provide maximum benefits for biodiversity and this natural regeneration will encourage a mosaic of successional habitats, forming broad habitat corridors throughout the Proposed Development. The above measures will greatly enhance the diversity of hedgerows present as well as provide positive management outcomes for existing species-rich hedgerows. This is in line with the expectations within national and local planning policy.	Medium	**Moderate beneficial effect – Significant**
Terrestrial Invertebrates	Medium	The conversion of intensively managed arable farmland to grassland within the Principal Site is likely to be of immediate benefit to terrestrial invertebrates. An increase in permanent habitat of greater floristic diversity than arable farmland and indirect beneficial impacts through a reduction of agricultural chemical inputs to watercourses and a reduction in pesticide use on crops is likely to result in an increase in invertebrate abundance and diversity.	Medium	Minor beneficial effect – not significant

IEF	Sensitivity (Value)	Enhancement Measures	Magnitude of Impact	Residual Effect
Reptiles and amphibians – Grass Snake, Common Toad	Low	The increase in permanent grassland habitat of greater floristic diversity than arable farmland across the Principal Site will result in an increase in invertebrate abundance and habitat niches, which, during the lifetime of the Proposed Development (60 years) will provide conditions suitable for the spread of reptiles and amphibians (where present within the DCO Site or ZoI), with the potential for increased colonisation of the Principal Site by reptile and amphibian species from the wider area. This is in line with the expectations within national and local planning policy.	Medium	Minor beneficial effect – not significant
Breeding birds (General breeding bird assemblage)	Medium	New planting of hedgerows and trees, alongside natural regeneration of woodland and allowing such habitats to grow tall and wide will be of benefit to the majority of breeding bird species by providing additional foraging, roosting and potential nesting habitat. The increase in woodland, scrub and hedgerow habitat, likely resulting in an increase in invertebrate abundance and of fruiting tree species (providing additional foraging resources) will, during the lifetime of the Proposed Development (60 years), be of benefit to the majority of breeding bird species and will also create additional opportunities for breeding bird species to nest.	Medium	Minor beneficial effect – Not significant

IEF	Sensitivity (Value)	Enhancement Measures	Magnitude of Impact	Residual Effect
Breeding birds – territories of specially protected species within the Principal Site	Up to Medium	The provision of additional nest boxes and creation of new habitats (such as hedgerows and permanent grassland) will increase the availability of potential nesting and foraging habitat on and adjacent to the DCO Site for species reliant on such habitats.	Medium	Minor beneficial – not significant
Non-breeding birds	Medium	New planting of hedgerows and trees (including species that produce berries such as Hawthorn), alongside natural regeneration of woodland and allowing such habitats to grow tall and wide will be of benefit to the majority of non-breeding bird species by providing additional foraging and roosting habitat. This increase in habitats, along with the resulting increase in seed resource from native grasslands, will during the lifetime of the Proposed Development, be of benefit to non-breeding birds. This is in line with the expectations of national and local planning policies pertaining to the natural environment and biodiversity.	Low	Minor beneficial effect – not significant
Bats (roosting and foraging / commuting)	Up to Medium	New planting of hedgerows and trees, alongside natural regeneration of woodland and allowing such habitats to grow tall and wide will be of benefit to the majority of bat species by providing additional foraging and commuting corridors and potential roosting habitat. The conversion of arable farmland to grassland habitats with also increase the overall abundance of invertebrate prey. This is in line with the expectations of national and local planning policies pertaining to the natural environment and biodiversity. The increase in woodland, scrub and hedgerow habitat, creating corridors across the DCO Site and likely resulting in an increase in	Low	Minor beneficial effect – not significant

IEF	Sensitivity (Value)	Enhancement Measures	Magnitude of Impact	Residual Effect
		invertebrate abundance (providing additional foraging resources) will, during the lifetime of the Proposed Development (60 years), be of benefit to bat species. The change from agriculture to solar panels with surrounding grassland as well as new areas of grassland (based on a net biodiversity gain of >10%) has the potential to improve the foraging habitat for bats. New grassland areas will provide a range of niches for invertebrates in and around the solar panels. The provision of artificial roost sites for bats, or mechanically creating wounds/cavities in selected trees to provide roosting features in the long-term would benefit some species as tree hollow/cavity scarcity is a threat to bats and other cavity-dependent vertebrate wildlife.		
Badger	Low	Planting of gaps in hedgerows and creation of new hedgerows, tree planting and conversion of arable land to grassland habitats (to increase the flora and invertebrates) will be of benefit to Badger. This is in line with the expectations of national and local planning policy.	Medium	Minor beneficial effect – not significant
Other mammals (Brown Hare, Hedgehog and potentially Harvest Mouse)	Low	Planting of gaps in hedgerows and creation of new hedgerows, tree planting and conversion of arable land to grassland habitats (to increase the flora and invertebrates) will be of benefit to SPI mammals. This is in line with the expectations of national and local planning policy.	Medium	Minor beneficial effect – not significant

8.14 Residual Effects

8.14.1 The assessment presented in this Chapter has been undertaken based on the IEFs presented in **Table 8-12**, Proposed Development information presented in **Chapter 3: Proposed Development** of this ES **[EN010154/APP/6.1]** and the commitments secured by the Design Commitments presented in **Appendix A** of the **Design Approach Document [EN010154/APP/7.3**] and the various management plans which support the DCO application (e.g. **Framework LEMP [EN010154/APP/7.15], Framework CEMP [EN010154/APP/7.7], Framework OEMP [EN010154/APP/7.8], Framework DEMP [EN010154/APP/7.9]**). No significant adverse effects have been identified during construction, operation or decommissioning of the Proposed Development.

8.14.2 The Proposed Development has the potential to generate beneficial effects for a number of the IEFs identified in **Table 8-12**, occurring in both aquatic and terrestrial habitats, from the cessation of farming practices including agricultural chemical inputs to watercourses and pesticide use on crops, as well as the extensive creation of grassland habitats and positive management of existing boundary features.

8.15 Cumulative Effects

8.15.1 This section assesses the potential effects of the Proposed Development in combination with the potential effects of other proposed and committed plans and projects including other developments (referred to as 'cumulative developments') within the surrounding area.

8.15.2 This Cumulative Effect assessment has identified, for each feature, the areas where the predicted effects of the Proposed Development could interact with effects arising from other plans and/or projects on the same feature based on a spatial and/ or temporal basis.

8.15.3 It is expected that all of the cumulative developments included in this assessment will implement suitable mitigation measures in line with relevant legislative and policy requirements and best practice. Therefore, the potential for impacts to IEFs as a result of the Proposed Development, are considered within the DCO Site itself. Other developments are not likely to contribute to the effects on IEFs identified in this Chapter and therefore the effects are not significant. A summary of this assessment is provided in **Table 8-19**.

Table 8-19: Assessment of Cumulative Effects

IEF	Importance (value)	Description of the Potential Impact from the Proposed Development	Residual Effect Category	Proposed Development ID	Description of Cumulative Impact	Residual Cumulative Effect Category	Cumulative Effect (Yes/No)
Navenby, Green Man Road Verges LWS	Medium	The construction of the Cable Corridor will lead to a loss of small section of habitat within the LWS.	Minor Adverse	63, 86	As these cumulative developments are yet to assess the potential impacts to the LWS and there is currently no information available regarding mitigation, it is reasonable to assume that these developments will provide suitable good industry mitigation measures to reduce or offset impacts, in adherence with legislation and policy and that there would be no change from the residual effects assessed for the Proposed Development.	Negligible	No
Veteran and ancient trees							
Deschampsia neutral grassland	Low	The construction of the Interconnecting Cable Corridor will be via trenched method which will lead to a temporary loss of a	Minor Adverse	13, 52	These cumulative developments have the potential for pollution to local watercourses and/or groundwater from construction site runoff	Negligible	No

IEF	Importance (value)	Description of the Potential Impact from the Proposed Development	Residual Effect Category	Proposed Development ID	Description of Cumulative Impact	Residual Cumulative Effect Category	Cumulative Effect (Yes/No)
		narrow corridor within this habitat.			which could result in impacts to adjacent habitats during their construction. Assuming these cumulative developments follow or will follow (where there is currently no information available from these cumulative developments), appropriate mitigation measures to reduce or offset impacts in adherence with legislation and policy, it is reasonable that the potential for impacts is only within the DCO Site itself and that there would be no change from the residual effects assessed for the Proposed Development.		
Main Rivers (including Ditches)	Medium	The construction of the Proposed Development is predicted to temporarily impact upon running water habitats (where non-intrusive crossings are	Minor Adverse	5, 8, 18, 34, 37, 49, 86, 33, 58, 98, 99, 101, 103, 108	These cumulative developments have the potential for pollution to local watercourses and/or groundwater from construction site runoff containing pollutants and fine sediment, chemical	Negligible	No

IEF	Importance (value)	Description of the Potential Impact from the Proposed Development	Residual Effect Category	Proposed Development ID	Description of Cumulative Impact	Residual Cumulative Effect Category	Cumulative Effect (Yes/No)
		not possible) which in turn will lead to temporary fragmentation of running water, although the exact construction methods are not fully defined.			spillages and increased flood risk during construction. Assuming these cumulative developments follow or will follow (where there is currently no information available from these cumulative developments), appropriate mitigation measures to reduce or offset impacts in adherence with legislation and policy, it is reasonable that the potential for impacts is only within the DCO Site itself and that there would be no change from the residual effects assessed for the Proposed Development.		
Cropland – arable field margins and arable fields with pollen and nectar and, or, wild bird mix	Up to High	Construction activities are predicted to result in the permanent loss of arable field margins with scarce arable flora and loss and fragmentation of cropland (arable fields	Minor Adverse	86, 105	These cumulative developments overlap with the DCO Site and have the potential for impacts to arable field margins during construction. Assuming cumulative developments follow or will	Negligible	No

IEF	Importance (value)	Description of the Potential Impact from the Proposed Development	Residual Effect Category	Proposed Development ID	Description of Cumulative Impact	Residual Cumulative Effect Category	Cumulative Effect (Yes/No)
		with pollen and nectar and, or, wild bird mix) within the Principal Site			follow appropriate mitigation measures to reduce or offset impacts in adherence with legislation and policy, it is reasonable that the potential for impacts is only within the DCO Site itself and that there would be no change from the residual effects assessed for the Proposed Development.		
Hedgerows	Medium	Construction activities are predicted to result in the potential for the loss of small sections of hedgerow as a result of construction of the Cable Corridor, fences and access routes. Replanting has been embedded within the design for creation of hedgerows. Whilst it is acknowledged that these will take time to develop, once established the overall	Minor Adverse	86, 105, 108	Whilst individually all cumulative developments may have localised effects on small sections of hedgerows specific to their development area, there is unlikely to be any spatial overlap in the hedgerow resource, with cumulative developments mitigating any loss (and if not known, assumed to be mitigating any loss), where appropriate. As such, none of the cumulative developments that are identified as overlapping the	Negligible	No

IEF	Importance (value)	Description of the Potential Impact from the Proposed Development	Residual Effect Category	Proposed Development ID	Description of Cumulative Impact	Residual Cumulative Effect Category	Cumulative Effect (Yes/No)
		hedgerow resource will be greater than is currently present.			DCO Site or are immediately adjacent to (86, 105, 108) are considered to have the potential for adverse effects on hedgerows within the DCO Site during construction.		
Ground-nesting birds	Up to Medium	There will be an extent of habitat loss across the Principal DCO Site which without mitigation will lead to the loss of habitat used by ground-nesting birds.	Minor adverse	63, 86, 87, 88, 101, 103, 105	Cumulative developments of similar developments or that overlap the DCO Site, where there is land-take of arable farmland and where there are ground-nesting birds, has the potential to interact cumulatively with the Proposed Development. However, where cumulative developments are predicted to have adverse effects on the same ground-nesting bird species as that present within the DCO Site, appropriate mitigation measures are included within respective developments, to ensure there are no significant residual effects. Where	Negligible	No

IEF	Importance (value)	Description of the Potential Impact from the Proposed Development	Residual Effect Category	Proposed Development ID	Description of Cumulative Impact	Residual Cumulative Effect Category	Cumulative Effect (Yes/No)
					there is currently no information available from cumulative developments, regarding mitigation, it is reasonable to assume that these will provide suitable mitigation measures to reduce or offset impacts on ground-nesting birds, in adherence with legislation and policy.		
Bats	Up to Medium	There will be changes in habitat use from farmland (mainly arable) to solar infrastructure resulting in potential operational impacts to commuting and foraging bats which without mitigation may lead to adverse effects on bat populations.	Minor adverse	63, 86, 87, 88, 101, 103, 105	Cumulative developments of similar developments or that overlap the DCO Site, where there is land-take of arable farmland, with similar levels of bat activity, has the potential to interact cumulatively with the Proposed Development. However, where cumulative developments are predicted to have adverse effects on bats as that present within the DCO Site, appropriate mitigation measures are included within respective developments, to ensure	Negligible	No

IEF	Importance (value)	Description of the Potential Impact from the Proposed Development	Residual Effect Category	Proposed Development ID	Description of Cumulative Impact	Residual Cumulative Effect Category	Cumulative Effect (Yes/No)
					there are no significant residual effects. This includes large areas of new grassland, new hedges and tree lines. Where there is currently no information available from cumulative developments, regarding mitigation, it is reasonable to assume that these will provide suitable mitigation measures to reduce or offset impacts on bats, in adherence with legislation and policy.		

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