XLINKS' MOROCCO-UK POWER PROJECT

Environmental Statement

Rev01 (Clean)

Volume 2, Chapter 1: Onshore Ecology and Nature Conservation

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Glossary

Term	Meaning
Alverdiscott Substation	The existing National Grid Electricity Transmission substation at Alverdiscott, Devon, which comprises 400 kV and 132 kV electrical substation equipment.
Alverdiscott Substation Connection Development	The development required at the existing Alverdiscott Substation Site, which is envisaged to include development of a new 400 kV substation, and other extension modification works to be carried out by National Grid Electricity Transmission. This does not form part of the Proposed Development, however, it is considered cumulatively within the Environmental Impact Assessment as it is necessary to facilitate connection to the national grid.
Alverdiscott Substation Site	The National Grid Electricity Transmission site within which the Alverdiscott Substation sits.
Applicant	Xlinks 1 Limited.
Biodiversity Net Gain	An approach to development that leaves biodiversity in a better state than before. Where a development has an impact on biodiversity, developers are encouraged to provide an increase in appropriate natural habitat and ecological features over and above that being affected to ensure that the current loss of biodiversity through development will be halted and ecological networks can be restored.
Bipole	A Bipole system is an electrical transmission system that comprises two Direct Current conductors of opposite polarity (one conductor with positive voltage and one with negative voltage).
Climate change	A change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.
Converter Site	The Converter Site is proposed to be located to the immediate west of the existing Alverdiscott Substation Site in north Devon. The Converter Site would contain two converter stations (known as Bipole 1 and Bipole 2) and associated infrastructure, buildings and landscaping.
Converter station	Part of an electrical transmission and distribution system. Converter stations convert electricity from Direct Current to Alternating Current, or vice versa.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Earthworks	Covers the processes of soil-stripping, ground-levelling, excavation, and landscaping, as defined by the Institute of Air Quality Management.
Environmental Impact Assessment	The process of identifying and assessing the significant effects likely to arise from a project. This requires consideration of the likely changes to the environment, where these arise as a consequence of a project, through comparison with the existing and projected future baseline conditions.
Environmental Statement	The document presenting the results of the Environmental Impact Assessment process.
Horizontal Directional Drilling	Horizontal Directional Drilling (HDD) is a method of installing underground pipelines, cables and service conduit (or ducts) through trenchless methods to avoid obstacles and sensitive features (e.g. roads, watercourses, woodlands, etc.). The term HDD is used here interchangeably with other similar trenchless techniques but excluding micro tunnelling or direct pipe methods.
HVAC Cables	The High Voltage Alternating Current cables which would bring electricity from the converter stations to the new Alverdiscott Substation Connection Development.
HVAC Cable Corridors	The proposed corridors (for each Bipole) within which the onshore High Voltage Alternating Current cables would be routed between the Converter Site and the Alverdiscott Substation Site.

Term	Meaning
HVDC Cables	The High Voltage Direct Current cables which would bring electricity to the UK converter stations from the Moroccan converter stations.
Intertidal area	The area between Mean High Water Springs and Mean Low Water Springs.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the transition joint bays inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Maximum design scenario	The realistic worst case scenario, selected on a topic-specific and impact specific basis, from a range of potential parameters for the Proposed Development.
Mean High Water Springs	The height of mean high water during spring tides in a year.
Offshore Cable Corridor	The proposed corridor within which the offshore cables are proposed to be located, which is situated within the UK Exclusive Economic Zone.
Onshore HVDC Cable Corridor	The proposed corridor within which the onshore High Voltage Direct Current cables would be located.
Onshore Infrastructure Area	The proposed infrastructure area within the Order Limits landward of Mean High Water Springs. The Onshore Infrastructure Area comprises the transition joint bays, onshore HVDC Cables, converter stations, HVAC Cables, highways improvements, utility diversions and associated temporary and permanent infrastructure including temporary compound areas and permanent accesses.
Order Limits	The area within which all offshore and onshore components of the Proposed Development are proposed to be located, including areas required on a temporary basis during construction (such as construction compounds).
Planning Inspectorate	The agency responsible for operating the planning process for applications for development consent under the Planning Act 2008.
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project, and which helps to inform consultation responses.
Proposed Development	The element of Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.
Protected species	A species of animal or plant which it is forbidden by law to harm or destroy.
Study area	This is an area which is defined for each environmental topic which includes the Order Limits as well as potential spatial and temporal considerations of the impacts on relevant receptors. The study area for each topic is intended to cover the area within which an impact can be reasonably expected.
Survey area	The area within which each survey has been undertaken. This may differ from the study area as a survey area will be based on species or survey-specific guidance on the extent of survey required, which may be limited by, for example, habitat conditions, or be defined in terms of buffer areas around an area of potential impact.
Xlinks' Morocco UK Power Project	The overall scheme from Morocco to the national grid, including all onshore and offshore elements of the transmission network and the generation site in Morocco (referred to as the 'Project').

Acronyms

Acronym	Meaning
AC	Alternating Current
BNG	Biodiversity Net Gain
CEMP	Construction Environment Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CWS	County Wildlife Site
DAS	Discretionary Advice Service (Natural England's charged advice service)
DBRC	Devon Biodiversity Records Centre
DC	Direct Current
Defra	Department for Environment, Food & Rural affairs
DMRB	Design Manual for Roads and Bridges
EIA	Environmental Impact Assessment
ES	Environmental Statement
HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IEF	Important Ecological Features
INNS	Invasive Non-Native Species
JNCC	Joint Nature Conservation Committee
LEMP	Landscape and Ecological Management Plan
LNR	Local Nature Reserve
MHWS	Mean High Water Springs
NPS	National Policy Statement
LEMP	Landscape and Ecology Management Plan
On-CEMP	Onshore Construction Environmental Management Plan
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
PRoW	Public Right of Way
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
UK	United Kingdom
UWS	Unconfirmed Wildlife Site
VER	Valued Ecological Receptor

Units

Units	Meaning
ha	Hectares
km	Kilometre
kV	Kilovolt
m	Metre

1 ONSHORE ECOLOGY AND NATURE CONSERVATION

1.1 Introduction

1.1.1 This chapter of the Environmental Statement (ES) presents the findings of the Environmental Impact Assessment (EIA) undertaken for the United Kingdom (UK) elements of the Xlinks' Morocco-UK Power Project (the 'Project'). For ease of reference, the UK elements of the Project are referred to in this chapter as the 'Proposed Development'. The ES accompanies the application to the Planning Inspectorate for development consent for the Proposed Development.

1.1.2 This chapter considers the likely impacts and effects of the Proposed Development on onshore ecology and nature conservation during the construction, operation and maintenance and decommissioning phases. Specifically, it relates to the onshore elements of the Proposed Development landward of Mean High Water Springs (MHWS). Those elements of the Proposed Development located seaward of MHWS are addressed in Volume 3, Chapter 1: Benthic Ecology of the ES.

1.1.3 In particular, this ES chapter:

- identifies the key legislation, policy and guidance relevant to onshore ecology and nature conservation;
- details the EIA scoping and consultation process undertaken to date for onshore ecology and nature conservation;
- confirms the study area for the assessment, the methodology used to identify baseline environmental conditions, the impact assessment methodology, and identifies any assumptions and limitations encountered in compiling the environmental information;
- sets out the existing and future environmental baseline conditions, established from desk studies, surveys and consultation;
- details the mitigation and/or monitoring measures that are proposed to prevent, minimise, reduce or offset the possible environmental effects identified in the EIA process;
- defines the project design parameters used to inform for the impact assessment;
- presents an assessment of the likely impacts and effects in relation to the construction, operation and maintenance and decommissioning phases of the Proposed Development on onshore ecology and nature conservation; and
- identifies any cumulative, transboundary and/or inter-related effects in relation to the construction, operation and maintenance and decommissioning phases of the Proposed Development on onshore ecology and nature conservation.

1.1.4 The assessment presented is informed by the following technical chapters and should be read in conjunction with:

- Volume 2, Chapter 3: Hydrology and Flood Risk;
- Volume 2, Chapter 4: Hydrogeology, Geology and Ground Conditions;
- Volume 2, Chapter 7: Air Quality; and
- Volume 4, Chapter 2: Landscape, Seascape and Visual Resources.

1.1.5 This chapter also draws upon additional information to support the assessment contained within the following appendices:

- Volume 2, Appendix 1.1: Phase 1 Habitat Survey;
- Volume 2, Appendix 1.2: Ecological Desk Study;
- Volume 2, Appendix 1.3: Dormouse Report;
- Volume 2, Appendix 1.4: Bat Activity and Remote Detector Surveys;
- Volume 2, Appendix 1.5: Preliminary Bat Ground Level Tree Assessment;
- Volume 2, Appendix 1.6: Otter and Water Vole Survey;
- Volume 2, Appendix 1.7: Badger Survey;
- Volume 2, Appendix 1.8: Breeding, Wintering and Migratory Bird Surveys;
- Volume 2, Appendix 1.9: Reptile Survey;
- Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring of Watercourses to be Crossed;
- Volume 2, Appendix 1.11: River Condition Assessment; and
- Volume 2, Appendix 1.12: Natural England DAS Meeting Notes.

1.2 Legislative and Policy Context

Legislation

1.2.1 The following pieces of legislation are considered relevant to the topic of onshore ecology and nature conservation.

- The Environment Act 2021. This Act relates particularly to issues of Biodiversity Net Gain (BNG).
- The Conservation of Habitats and Species Regulations 2017. These Regulations have particular bearing on protection of designated sites and European Protected Species.
- The Wildlife and Countryside Act 1981 (as amended). This Act relates particularly to designation of sites and their protection along with protection of a number of species.
- The Protection of Badgers Act 1992. Relates specifically to protection of badgers.
- The Countryside and Rights of Way Act 2000. This Act extends powers set out in the Wildlife and Countryside Act 1981 (as amended) in relation to protection of some species and made increased provision for detection and penalties relating to offences.
- The Hedgerows Regulations 1997. Identifies Important Hedgerows and provides measures for their protection.

- The Management of Hedgerows Regulations 2024.
- The Natural Environment and Rural Communities Act 2006. This Act identifies a series of habitats and species of "principal importance" and places a duty on public authorities to conserve them.
- Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. Irreplaceable habitats are now confirmed by The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. Such habitats include coastal sand dunes, ancient woodland and ancient and veteran trees.

Planning Policy Context

1.2.2 The Proposed Development would be located within the UK Exclusive Economic Zone offshore waters (beyond 12 nautical miles (nm) from the English coast) and inshore waters, with the onshore infrastructure proposed to be located wholly within Devon, England. As set out in Volume 1, Chapter 1: Introduction, of the ES, the Secretary of State for the Department for Energy Security and Net Zero (DESNZ) has directed that elements of the Proposed Development are to be treated as development for which development consent is required under the Planning Act 2008, as amended.

National Policy Statements

1.2.3 There are currently six energy National Policy Statements (NPSs), three of which contain policy relevant to the Proposed Development, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the UK Government's policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero 2023a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero 2023b); and
- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero 2023c).

1.2.4 **Table 1.1** sets out key aspects from the NPSs relevant to the Proposed Development, with particular reference to the need for and approach to consenting such infrastructure.

Table 1.1: Summary of relevant NPS policy

Summary of NPS requirement	How and where considered in the ES
NPS EN-1	
Environmental and biodiversity net gain (section 4.6 of NPS EN-1): Nationally significant energy proposals, whether onshore or offshore, should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity, and the wider environment where possible (paragraph 4.6.6). Net gain should be measured using the latest version of the Biodiversity Metric (currently the statutory	The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. The Proposed Development provides habitat improvements which offer mitigation for effects on protected species groups such as dormice and bats, and offers opportunities to connect habitat features across the broader landscape, with proposed planting within the

Summary of NPS requirement	How and where considered in the ES
biodiversity metric) to identify gains (paragraph 4.6.7).	Converter Site likely to provide strengthened connections between two differing corridors running beyond the Proposed Development footprint itself. Further elements of landscape planting to include woodland planting on either side of the Torridge Estuary will also provide increased habitat opportunities for these groups and breeding bird species. Additional measures to enhance some sections of hedgerow along the Onshore HVDC Cable Corridor also offers opportunities to further strengthen biodiversity and links across this landscape.
Biodiversity and Geological Conservation (section 5.5 of NPS EN-1): Protection of sites designated for biodiversity conservation at all levels and protection and enhancement of habitats and species (section 5.4). Internationally-important sites such as Special Protection Area (SPA) and Special Areas of Conservation (SAC) should be subject to Habitats Regulations Assessment (HRA) where there is a risk of impacts. Where there is a risk of adverse effects on nationally important sites such as Site of Special Scientific Interest (SSSI), the development should be avoided. Developments which affect locally-designated sites should provide details of measures set out to avoid or mitigate such harm and provide enhancements to the purpose of the site, where possible. Important and irreplaceable habitats such as ancient woodland, blanket bog, limestone pavement, coastal sand dunes, spartina salt marsh and lowland fen should be avoided and protected from impacts by developments.	Description of the onshore ecology and nature conservation baseline is set out in **section 1.7**. The approach to protection of sites, habitats and species is set out in **section 1.8** and **Table 1.14**. Scoping responses and consultation (see Volume 2, Appendix 1.12: Discretionary Advice Service Notes) from Natural England have confirmed that the proposed cable route is unlikely to have a significant effect on terrestrial European sites. Therefore, impacts on internationally-important terrestrial sites requiring HRA has been scoped out (see **Table 1.4**). By careful routing, the scheme avoids direct impacts on any statutory designated sites and minimises effects on locally-designated sites. In many cases, trenchless techniques such as Horizontal Directional Drilling (HDD) mean that it will be possible to cross important biological or geological sites with no direct impacts. The Proposed Development avoids direct impacts on ancient woodland and other important habitats by a combination of route avoidance and measures such as HDD which prevents direct impacts upon existing habitats. Where feasible, the Proposed Development has used the Conservation Hierarchy ("avoid, minimise, restore and offset") as a principle for its routing, design and construction methods.
NPS EN-5	
Environmental and biodiversity net gain - Recognition that the linear nature of electricity networks infrastructure can allow for excellent opportunities to: i). reconnect important habitats via green corridors, biodiversity stepping zones, and reestablishment of appropriate hedgerows; and/or ii). connect people to the environment, for instance via footpaths and cycleways constructed in tandem with environmental enhancements (Section 2.5).	Approach to mitigation is set out in **section 1.8**, including reinstatement of Devon Hedgerows and enhancement of habitat to increase connectivity across the landscape. The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit.
Mitigation - Consider and address routing and avoidance/minimisation of environmental impacts both onshore and offshore at an early stage in the development process. Section 2.10 is primarily concerned with placement of overhead cable routes in relation to bird flight lines and migratory routes.	The site selection process of the Onshore HVDC Cable Corridor is set out within Volume 1, Chapter 4: Needs and Alternatives of the ES. Mitigation relating to designated sites, habitats and protected species is set out in **section 1.8**. As previously noted, the Proposed Development has sought to utilise the Conservation Hierarchy to avoid effects on designated sites and important habitats wherever possible and to minimise effects on those locally-designated sites and important habitats through construction methodologies such as trenchless techniques (i.e. HDD).

The National Planning Policy Framework

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

1.2.6 The NPPF has been updated and the draft version was published for consultation on 30 July 2024 with the consultation period ending on 24 September 2024 (Ministry of Housing, Communities and Local Government, 2024).

1.2.7 **Table 1.2** sets out a summary of the NPPF policies relevant to this chapter.

Table 1.2: Summary of NPPF requirements relevant to this chapter

Policy	Key provisions	How and where considered in the ES
15. Conserving and Enhancing the Natural Environment: **General**	Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)	Approach to protecting designated sites and habitats of importance is set out in **section 1.8.**
	Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;	This is covered within the following ES chapters: • Volume 4, Chapter 2: Landscape, Seascape and Visual Resources. • Volume 2, Chapter 8: Land Use and Recreation.
	Maintaining the character of the undeveloped coast, while improving public access to it where appropriate	
	Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;	The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. However enhancing habitats and creating additional biodiverse habitats are intrinsic parts of the landscape strategy plan at the Converter Site (see Outline Landscape and Ecology Management Plan (LEMP) (document reference 7.10)). Additional habitat enhancement opportunities have been identified in fields adjacent to the River Torridge. Along the Onshore HVDC Cable Corridor temporary hedgerow loss will be fully reinstated. In addition, Devon hedgebank creation and enhancement opportunities have been identified. These will help reduce impacts on biodiversity and

Policy	Key provisions	How and where considered in the ES
		contribute to hedgerow network and connectivity in the medium and long term. These measures are set out in **section 1.8** of this chapter.
	To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and	Baseline designated sites are set out in Volume 2, Figure 1.2a. Baseline habitats identified to date are shown in Volume 2, Appendix 1.1: Phase 1 Habitat Survey, of the ES.
15. Conserving and Enhancing the Natural Environment: **Habitats and Biodiversity**	a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation	This ES chapter (and appendices) sets out the approach to identifying, mapping and assessing habitats and biodiversity (see **section 1.6**), and sets out mitigation measures (see **Table 1.14**) including those which provide enhancements to features providing wildlife corridors
	b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.	Measures to mitigate potential effects on designated sites, habitats and protected or otherwise notable species set out in **section 1.8**. The mitigation section also includes the consideration of habitat creation and enhancements, including mitigation measures for protected groups such as dormice, bats and birds.
15. Conserving and Enhancing the Natural Environment: **Ground Conditions and Pollution**	a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation)	This is covered within the following chapters: • Volume 2 Chapter 3: Hydrology and Flood Risk; and • Chapter 4: Geology, Hydrogeology and Ground Conditions of the ES.
	b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990	
	c) adequate site investigation information, prepared by a competent person, is available to inform these assessments	

1.2.8 The draft NPPF includes similar provisions as the current designated NPPF. The draft NPPF has been reviewed and there are no material updates for onshore ecology and nature conservation.

1.2.9 The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2023) supports the NPPF and provides guidance across a range of topic areas. Of particular relevance to this topic are the notes on green infrastructure and conserving and enhancing the natural environment.

Local Planning Policy

1.2.10 The onshore elements of the Proposed Development are located within the administrative area of Torridge District Council (and Devon County Council at the County level). The relevant local planning policies applicable to onshore ecology and nature conservation based on the extent of the study areas for this assessment are summarised in **Table 1.3**.

Table 1.3: Summary of local planning policy relevant to this chapter

Policy	Key provisions	How and where considered in the ES
The North Devon and Torridge Local Plan 2011-2031		
ST14	Enhancing Environmental Assets: providing a net gain in biodiversity, protecting the hierarchy of designated sites and conserving European Protected species.	The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. Approach to biodiversity enhancement is set out in **section 1.8.** This includes landscaping at the Converter Site, which will create new habitat and increase connectivity with wildlife corridors outside the boundary of the Proposed Development. This approach will be adopted in the habitat enhancement areas in the fields accommodating HDD compounds on either side of the Torridge Estuary. The part of the hedgerow network within the Proposed Development (which is dominated by Devon hedges) will be subject to reinstatement, additional creation and targeted enhancements along the Onshore HVDC Cable Corridor. The areas of habitat creation and enhancement will have features that have value for protected species such as dormice, bats and breeding birds.
DM02	Environmental Protection: Prevention of air, water, noise and light pollution caused by development.	Measures to mitigate potential effects on designated sites, habitats and protected or otherwise notable species set out in **section 1.8**.
DM08	Conserve, protect and, where possible, enhance biodiversity and geodiversity interests and soils commensurate with their status and giving appropriate weight to their importance.	Measures to mitigate potential effects on designated sites, habitats and protected or otherwise notable species set out in **section 1.8**.

Relevant Guidance

1.2.11 The following documents have been used for guidance on completing this assessment and for providing appropriate levels of survey (where possible) and mitigation for protected or otherwise notable ecological features, habitats and species:

- Animal and Plant Health Agency (2023) Module 1: Supporting Skills for Badger Vaccination Training Course;
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland;
- CIEEM (2021) Good Practice Guidance for Habitats and Species Version 3;
- Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists Good Practice Guidelines;
- CIEEM (2023) UK Bat Mitigation Guidelines;
- Devon Biodiversity Records Centre: Devon Great Crested Newt consultation Zone;
- English Nature (2006) Dormouse Conservation Handbook;
- Natural England (2008) Devon field boundaries: restoration standards for agri-environment schemes Natural England Technical Information Note 039;
- Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). Bird Census Techniques: 2nd edition. Academic Press, London;
- Joint Nature Conservation Committee (JNCC, 1998) The Herpetofauna Workers' Manual;
- JNCC (2003) Handbook for Phase 1 habitat survey;
- Environment Agency (1999) Procedures for collecting and analysing macro-invertebrate samples;
- Environment Agency (2017) Freshwater macro-invertebrate sampling in rivers; and
- Environment Agency (2014) Freshwater macro-invertebrate analysis of riverine samples.

1.3 Consultation and Engagement

Scoping

1.3.1 In January 2024, the Applicant submitted a Scoping Report to the Planning Inspectorate, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects for the construction, operation and maintenance and decommissioning phases of the Proposed Development. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Proposed Development would not have the potential to give rise to significant environmental effects in these areas.

1.3.2 Following consultation with the appropriate statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion

on 7 March 2024. Key issues raised during the scoping process specific to onshore ecology and nature conservation are listed in **Table 1.4**, together with details of how these issues have been addressed within the ES.

Table 1.4: Summary of Scoping Responses

Comment	How and where considered in the ES
Planning Inspectorate	
'*The Scoping Report does not list specific non-statutory sites for consideration in the impact assessment. The Applicant's attention is directed to the responses of NE and the EA at Appendix 2 to this Opinion with regards to potential County Wildlife Sites (CWS) that lie within or near to the study area, which may be affected by the Proposed Development. The ES should clearly identify and assess likely significant effects to non-statutory sites where they could occur. The Applicant should seek to agree the scope of the assessment for such sites with the relevant consultation bodies, where possible*.'	Features of statutory and non-statutory designated sites were considered when identifying the list of Important Ecological Features (IEFs) listed in **Table 1.13** of this chapter. The assessment of effects for the Proposed Development has been assessed in **sections 1.10** to **1.12**.
'*The Inspectorate notes a suite of project-specific ecological surveys have been carried out between 2021 to 2023 and are ongoing in 2024. Paragraphs 1.4.6 and 6.2.6 describe that a DCO application is anticipated in Autumn 2024. Limited information is provided on the extent of the further data collection in 2024, including information on the proposed locations and scope of planned surveys, and when data collection would be completed.* *The Inspectorate advises that survey effort should be designed to provide sufficient information such that the baseline data in the ES submitted at application is adequate for the purposes of assessing the likely significant effects of the Proposed Development*.'	**Summary of completed survey** • **Habitats** – the Onshore Infrastructure Area with the use of aerial photography and ground truthing from PRoW at Converter Site (see Volume 2, Appendix 1.1: Phase 1 Habitat Survey). • **Breeding birds** – Whole Onshore Infrastructure Area with data for Converter Site from PRoW (Volume 2, Appendix 1.8: Breeding, Wintering and Migratory Bird Surveys). • **Wintering birds** – Key habitat assessment at the Landfall and Torridge Estuary (Volume 2, Appendix 1.8: Breeding, Wintering and Migratory Bird Surveys). • **Bat activity** – Construction and HDD compounds along Onshore HVDC Cable Corridor (see Volume 2, Appendix 1.4: Bat Activity and Remote Detector Surveys). • **Bat roosts** – Ground assessment of all trees within the Onshore Infrastructure Area (Volume 2, Appendix 1.5: Preliminary Ground Level Bat Tree Roost Assessment). • **Badgers** – the Onshore Infrastructure Area with the Converter Site surveyed from PRoW (see Volume 2, Appendix 1.7: Badger Survey). • **Dormice** – coverage of *circa*. 50% of the route by end of 2023 incorporating the vast majority of the habitat of higher potential value within the Proposed Development (see Volume 2, Appendix 1.3: Dormouse Report). • **Otter** – all watercourses crossed by Onshore HVDC Cable Corridor and adjoining terrestrial habitat excluding the small watercourse on the eastern boundary of the Converter Site (see Volume 2, Appendix 1.6: Otter and Water Vole Survey)

Comment	How and where considered in the ES
	• **Reptiles** – Covering the areas of higher value habitat throughout the Onshore Infrastructure Area but with limited coverage at the Converter Site (see Volume 2, Appendix 1.9: Reptile Survey). • **Aquatic invertebrates** – all sections of freshwater watercourse within Onshore HVDC Cable Corridor (see Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring of Watercourses to be Crossed). In addition, surveys of all protected species undertaken in 2010 and 2011 covered 90% of Proposed Development. Although this is historic data, it provides a useful background to previous species activity. **Surveys being undertaken in 2024 and 2025** • **Habitats** –BNG habitat type and condition assessment confirmation for metric calculations. • **Wintering birds** – repeat survey of key habitats for wintering and migratory birds, assessment of use of fields in which temporary compounds will be located, including diurnal and nocturnal data. • **Breeding birds** – repeat survey of the breeding bird assemblage across whole of the Onshore Infrastructure Area. • **Dormouse** – survey for hedgerows to the west of the A39 and at the Converter Site. • **Badger** – survey to confirm presence / absence of setts in field boundaries at the Converter Site. • **Otter** – update survey of watercourses and adjoining terrestrial habitat. • **Bat roosts** – aerial inspections of all moderate and high value trees with the potential to be directly or indirectly impacted by the Proposed Development. • **Bat activity surveys** – (transects) October and November 2024 at the Converter Site and landfall (Interim Report included in Annex A of Volume 2, Appendix 1.4: Bat Activity and Remote Detector Surveys). • **Bat activity surveys** – (remote recording) October 2024 to February 2025 to assess use of flightlines during the hibernation season. The results of these surveys will be presented in species reports. The assessment has been prepared under the precautionary assumption of species presence at the Converter Site and Alverdiscott Substation Site and between the A39

Comment	How and where considered in the ES
	and Landfall, where surveys have not been possible until 2024/2025. This approach is considered to define a sufficiently robust baseline evaluation for an accurate assessment of the 'realistic worst case' likely significant effects of the Proposed Development. This, in combination with an assumption that the Proposed Development will be undertaken to the maximum design limits (unless it can be demonstrated at this stage that it is possible to reduce these) means that the assessment undertaken in this chapter should provide an accurate assessment of the 'maximum design scenario'. Survey data collected from 2024 and 2025 will not require placement of additional mitigation measures which have not been included. The final CEMP(s) will use the data in defining how and where the measures will be implemented in practice. Draft protected species licence applications and method statements will be prepared for hazel dormouse and bats following the precautionary assumption with sufficient detail to enable the licensing authority (Natural England) to issue 'Letters of No Impediment' (LoNI). For mobile species where the status of features change over time (such as bat roosts, badger setts, otter resting places) targeted surveys will continue to be collected up to the commencement of construction (and periodically during construction) to underpin actions being undertaken under species licensing and ensure legal compliance for construction activities.
'*The Scoping Report does not at this stage identify whether there are any ancient woodland or veteran tree habitats present in the study area that could be affected by the Proposed Development. The ES should include an assessment of the effects of the Proposed Development on ancient woodland and veteran trees, where significant effects are likely to occur, and explain the effort made to avoid effects on ancient woodland and veteran trees, and increased fragmentation of these habitats. Measures to fully mitigate direct and indirect effects of the Proposed Development on ancient woodland, veteran trees, or other irreplaceable habitats should be clearly described and appropriately secured*.'	There are no areas of ancient woodland or replanted ancient woodland within the Proposed Development. None of the trees within or adjacent to the Proposed Development have been classified as Veteran or Ancient based on their structure and size. Further details are provided in Volume 4, Appendix 2.6: Tree Survey Report and Arboricultural Impact Assessment of the ES. The boundary of one block of ancient woodland adjoins the boundary of the Proposed Development at Hallsannery. A minimum buffer of 15 m will be created between the working area and the boundary of the ancient woodland through Heras fencing. Additional native tree and shrub planting is proposed to create a new woodland habitat alongside this existing ancient woodland. This is presented in Volume 2, Figure 1.4. Further details on proposed planting is included within the Outline LEMP (document reference 7.10).

Comment	How and where considered in the ES
'*Although a proposed a Biosecurity Method Statement and Invasive Species Management Plan are described as measures to be adopted for the Proposed Development, the Scoping Report does not describe whether any INNS have been identified in the study area or whether the impact of INNS is proposed to be included in the assessment of likely significant effects.* *The Applicant's attention is directed to the comments of the EA at Appendix 2 to this Opinion, who have identified that there are multiple records of INNS within the study area, including Japanese knotweed, Indian balsam, Wireweed/Japanese seaweed, and common cord-grass. The ES should describe the INNS present within the ZoI of the Proposed Development and include an assessment of significant effects resulting from the spread of INNS, where likely to occur*.'	The presence of Invasive Non-Native Species (INNS) in the ZoI of the Proposed Development is set out in the Ecology Desk Study (Volume 2, Appendix 1.2 of the ES) and updated Phase 1 Habitat (Appendix 1.1 of the ES). The ZoI covers a radius of 2 km around the Onshore Infrastructure Area extending beyond the ZoI. Himalayan balsam has not been recorded within the footprint of the Proposed Development. Japanese knotweed has been identified in one location on the edge of the Onshore HVDC Cable Corridor while Montbretia plants occurs in several locations. The extent and distribution can change over time. Robust measures include exclusion and treatment of stands of Schedule 9 INNS outside of the working areas and target removal where avoidance is not possible. The implementation of measures to prevent the spread of any INNS as a result of the construction activities associated with the Proposed Development are set out in the Outline Onshore Construction Environmental Management Plan (On-CEMP) (document reference 7.7). Up to date survey data covering all INNS within and adjoining to working areas, in advance of the commencement of construction, and the full implementation of the detailed final On-CEMP(s) will ensure no significant effect could occur.
'*Table 7.2.2 contains limited information on the types of effects that may occur to ecological receptors from the Proposed Development, which are described very broadly in this table (e.g. impacts on designated sites). In respect of species, the description of likely impacts focuses largely on temporary and permanent habitat losses, with limited reference to other potential effects such as disturbance. There is also no reference to potential disturbance due to lighting associated with the Proposed Development during construction or operation. The ES should include an assessment of all likely significant effects to important ecological features/receptors, including the potential impact of lighting on watercourses and other habitats of importance to light-sensitive species such as otters and bats*.'	Commitments relating to construction and operational noise and lighting are detailed within **Table 1.14**. Construction site lighting would only operate when required and would be designed, positioned and directed to avoid unnecessary illumination of adjacent properties, sensitive ecological receptors and users of public footpaths. The design of the construction lighting would accord with details provided in the Outline On-CEMP (document reference 7.7) and the latest guidance. All woodland edge habitat and potential key flightlines are to remain as dark corridors. Temporary lighting compliance with the On-CEMP restrictions will be subject to review and monitoring by the ECoW. Operational lighting at the Converter Site would be designed in accordance with the Design Principles Statement (document reference 7.4), as well as the latest guidance and legislation. This would include directional lighting to minimise overspill into the surrounding landscape.
'*The ES should confirm whether any European Protected Species licences and/or mitigation licenses for other protected species licenses would be required. To provide the Examining Authority (ExA) with assurance that any necessary licence(s) are likely to be obtained, the Applicant should seek to obtain letters of no impediment (LoNI) from NE where*	The assessment confirms that a European Protected Species licence will be required for hazel dormouse and under a precautionary assumes that an EPS licence will be required for the loss of at least one tree bat roost. The need for a bat licence is being informed by surveys in 2024 and 2025, with avoidance to be adopted wherever feasible.

Comment	How and where considered in the ES
possible. The Applicant is referred to the Inspectorate's Advice Note Eleven, Annex C.'	The draft dormouse EPS licence will draw upon survey data obtained in 2010, 2021/2022, 2023 and 2024 with the findings consistently showing dormouse populations are widely distributed in the landscape crossed by the cable route, with most activity recorded close to woodland. The draft licence application will draw upon habitat status and connectivity as well as the survey data. This will allow the potential impacts of Proposed Development to be confidently predicted and inform the mitigation measures to minimise temporary fragmentation. The trees within the Order Limits have been subject to ground level assessment with additional and updated assessments ongoing in autumn 2024. All trees with bat roost potential that could be adversely affected will be subject to climbing surveys in autumn/winter 2024. A draft licence and method statement will be prepared in relation to the potential for bat roosts in trees to be affected. The draft licence applications and method statements will be issued to Natural England for their assurance that any such licences would be approved and 'Letters of No Impediment' (LoNI) can be issued from licensing authorities (Natural England).
'*The Scoping Report Ecology and Nature Conservation aspect chapter does not include reference to measures to protect the estuarine and downstream habitats from contamination/pollution during construction activities. The ES should provide details of proposed measures to avoid contamination or pollution of estuary and downstream habitats and explain how these measures will be secured*.'	The ES outlines the measures to avoid contamination/pollution incidents downstream on the estuary, although this will primarily be achieved by the proposed trenchless crossing method. Measures and methods to ensure downstream contamination events are avoided are set out in the Outline Bentonite Breakout Plan (document reference 7.20), Outline Pollution Prevention Plan (document reference 7.7, Appendix A) and Outline On-CEMP (document reference 7.7).
'*The ES should consider the potential for protected and notable species to become trapped in open trenches, such as but not limited to otters and badgers. Appropriate measures should be secured through the draft DCO (dDCO) to mitigate for such events*.'	Measures to prevent trapping terrestrial mammals or other wildlife in excavations will be detailed in the On-CEMP. The On-CEMP would be developed in accordance with the Outline On-CEMP (document reference 7.7).
'*Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request*.'	Information on the specific location of places of rest and other places used by sensitive species have been provided as a confidential appendix to the ES. Redacted versions have also been provided to ensure sensitive information remains confidential: see Volume 2, Appendix 1.6: Otter and Water Vole Survey and Volume 2, Appendix 1.7: Badger Survey.

Comment	How and where considered in the ES
'*Section 4 of the Scoping Report makes reference to the need for landscape and ecological planting for the Converter Sites. No mitigation measures appear to be discussed for the cable corridor. The ES should explain the types of mitigation proposed to avoid/reduce adverse effects on landscape and how they would be secured. The ES should include a masterplan and visualisations/illustrations, where possible, to demonstrate the effectiveness of landscape mitigation*.'	An Outline LEMP has been developed as part of the application for development consent (document reference 7.10).
Environment Agency	
'*The scoping boundary bisects the lower part of Kynoch's Foreshore (LNR), which is important for reedbeds, saltmarsh plants and is a feeding ground for birds. Whilst the HDD will avoid direct impact on the watercourse, the indirect impact of this activity (e.g. increased traffic and activity during the construction phase) may disturb wetland birds and this should be included in the EIA*.'	Potential disturbance to wetland birds is addressed within **section 1.10** to **1.12** of this ES chapter. Mitigation measures are also detailed within **Table** 1.14**.**
'*Non-statutory designated sites: Torridge Estuary, Tennacott Wood, Hallsannery, Gammaton Reservoir, Haddacott Moor, Abbotsham Cliff and Cornborough Cliff are all County Wildlife Sites (CWSs) which partially or fully lie within the Scoping Corridor. The applicant should consult Devon Wildlife Trust to determine the impact of the proposed works on these sites of local wildlife importance*.'	The presence of County Wildlife Sites is noted in **Table 1.12**. Baseline environment and initial potential for impacts on these sites is addressed in **section 1.9,** key parameters for assessment.
'*During the construction phase, the potential for accidental trapping of any wild mammals in open trenches should be considered*.'	Measures to prevent trapping terrestrial mammals or other wildlife in excavations will be detailed in On-CEMP/LEMP documents, as described in **Table 1.14** of this chapter.
'*During the construction phase the impact of lighting on any watercourses should be scoped in to avoid disturbance to nocturnal and light-sensitive species such as otters and bats*.'	Noted, the impact of construction lighting is considered within **section 1.10** of this ES chapter. Construction site lighting would only operate when required and would be designed, positioned and directed to avoid unnecessary illumination of adjacent properties, sensitive ecological receptors and users of public footpaths. It design of the construction lighting would accord with details provided in the Outline On-CEMP (document reference 7.7) and the latest guidance.
'*Section 7.2.28 states that the applicant has proposed a Biosecurity Method Statement and Invasive Species Management Plan. However, the EA holds records for multiple INNS along the scoping corridor (such as Wireweed, Japanese knotweed, Himalayan balsam and common cord-grass), hence the potential impact of INNS should be scoped in*.'	The presence of INNS in the ZOI of the Proposed Development is addressed within **section 1.8** of the ES, and measures to ensure INNS are appropriately managed during construction activity is set out in the Outline On-CEMP (document reference 7.7).
'*We support the consideration of biodiversity at an early stage in the project, with collection of ecological data starting in 2021. We support the otter surveys to identify holts, couches and resting places, but recommend that pre-construction surveys for otters*	Noted. The need for pre-commencement surveys for some species is addressed in **Table 1.14** and are also referred to in **Table 1.18**.

Comment	How and where considered in the ES
are also considered due to the roaming nature of the species.'	
'*We note that the species surveys will conclude in 2024, and the onshore element of the project will commence in 2026 and end in 2032 (including Phase One and Phase Two). Please note, the CIEEM Advice Note 'On the lifespan of ecological reports & surveys' states that the results of most ecological surveys are valid between 12-18 months. If construction commences 18 months following the survey dates, some or all of the ecological surveys may need to be updated, due to the transitory nature of some species (such as bats).*'	
'*BNG will become a legal requirement for NSIPs in November 2025. It is positive to read that the applicant intends to deliver at least 10% BNG, but we would encourage the applicant to provide additional gain wherever possible. The applicant should use the latest statutory version of the biodiversity metric tool to calculate BNG. The applicant should submit a Biodiversity Gain Plan, outlining how the project will deliver BNG. We note the intention to deliver BNG through hedgerow enhancement, boundary planting, woodland planting and species rich-grasslands, but would also encourage consideration of the potential for enhancements around watercourses*.'	The Proposed Development is not currently subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. Approach to biodiversity enhancement is set out in **section 1.8**. This includes a landscape scheme including features of biodiversity value at the Converter Site, where the creation of new habitat will increase connectivity with wildlife corridors outside the boundary of the Proposed Development. This approach will be adopted in the habitat enhancement areas in the fields accommodating HDD compounds on either side of the Torridge Estuary. The section of the hedgerow network within the Proposed Development (which is dominated by Devon hedges) will be subject to reinstatement, additional creation and targeted enhancements along the Onshore HVDC Cable Corridor.
'*Devon County Council has been appointed the responsible authority to develop the Local Nature Recovery Strategy. According to the latest project plan (October 2023), the Devon LNRS is currently producing the local habitat map, which will be published in Summer 2024. When complete the applicant should refer to the Devon local habitat map to inform decisions on where to site BNG delivery and any biodiversity enhancements*.'	Noted. Devon Local Habitat Map contains references to priority habitats (Priority Habitats (South) (England) @ Natural England. These habitats have been recorded within the Phase 1 habitat survey results and plan.
'*Any biodiversity enhancements around waterbodies should complement the local environmental objectives and programme of measures within the RBMP. The applicant should refer to the Catchment Restoration Plan produced by the North Devon Catchment Partnership, which was produced to support delivery of the Environmental Objectives of the South-West River Basin Management Plan. The applicant could support the delivery of local projects such as the Woods 4 Water project led by North Devon Biosphere Reserve, or assist with catchment challenges such as controlling Himalayan balsam*.'	Noted. The initial BNG aspirations for the Proposed Development have not been possible to progress as currently the requirement for DCO projects to provide BNG enhancements does not come into effect until November 2025. It is therefore not possible to obtain land for BNG under the CPO powers associated with DCO projects. Without this, it has not been possible to achieve voluntary agreements with local landowners to undertake the off-site habitat enhancements originally envisaged with the Proposed Development. Alternate means to develop and enact meaningful landscape-scale habitat creation will continue to be investigated and

Comment	How and where considered in the ES
	pursued. Where successful, these measures will be reported in a BNG assessment report.
Forestry Commission	
'*Regarding Biodiversity Net Gain – There are key opportunities in the Eastern areas of the site maps, South of Gammaton Moor for Woodland expansion. This could extend from the screening required around the substation site and enhance the scale and connectivity of the relatively fragmented woodland habitats situated in that area. This could be key as it would be enhancing areas of Grade 4 agricultural land bringing significant biodiversity improvements*.'	Noted. Woodland creation, particularly where this forms connective links between existing woodland is proposed at the Converter Site and in the habitat enhancement opportunity areas adjoining the ancient woodland at Hallsannery and Lodge Plantation on the eastern side of the River Torridge. Details relating to the biodiversity opportunities are presented in Volume 2, Figure 1.4.
'*We note that in this application, there is potential impacts on the northern limits of the Pixey Copse. This site is a recognised and mapped Ancient Semi-Natural Woodland (ASNW). As stated previously with the several references to how essential ancient woodland is as an 'irreplaceable habitat'*.'	Locations of Ancient Semi-Natural Woodland (ASNW) are included in the updated desk study and has been considered within this chapter.
'*With section 9.2.15 within the scoping report referring to impacts to woodland, the project should look to avoid the ancient woodland situated at Pixey Copse, Pillmouth Wood, and Thorne Wood/Bidd Copse, considering more significantly the irreplaceable ecology represented in the site rather than just GHG*.'	As set out in **section 1.7**, direct impacts on all ancient and other woodland habitat is avoided through the avoidance of features during the site selection process or through trenchless crossing methods. Measures to avoid and prevent indirect impacts on woodland habitat will be set out in detail in the final On-CEMP(s) for the Proposed Development. An outline version is provided as part of the DCO application (document reference 7.7).
'*4.9.18 – As stated, HDD or similar trenchless methods should be used to mitigate significant impacts and disturbance to the ground flora and fauna. When using this method, we would hope a Root Protection Area (RPA) would be appropriately calculated and executed to ensure minimal impact on the woodland. The Ancient Tree Forum, Woodland Trust and other literature suggests ancient woodlands and veteran trees need the have larger RPA's.* *The consensus suggest it should be whichever is greater of:* *• an area with a radius which is 15 times the diameter of the tree, with no cap* *• 5m beyond the crown.* *This is informed and underpinned from the guidance from the Forestry Commission and Natural England.* *This can be specifically identified using radar technologies that can detect woody roots around 2cm thick from above ground. This doesn't include the fine roots and wider mycorrhizal networks that would extend even further. For sites where there are ancient woodland and veteran trees and alternative routes for cable can't be done this method would be suggested next and trenchless methods placed appropriately below the identified Root Protection Area*.'	HDD (or other trenchless technologies) is to be used to avoid impacts on the areas of woodland located within the Onshore HVDC Cable Corridor which would otherwise be directly affected by the Proposed Development (see Volume 1, Chapter 3: Project Description of the ES). A standard woodland buffer of 15 m will be adopted throughout the Onshore HVDC Cable Corridor. The Root Protection Areas (RPAs) of woodland boundary trees extending beyond 15 m will be maintained. Protection measures will be set out in detail in the final On-CEMP(s)/LEMP(s) for the Proposed Development. None of the trees within the Proposed Development have been classified as veteran or ancient, but there are a number of mature trees (primarily pedunculate oak) with trunk diameters between 1 m and 1.2 m. The RPAs of all retained individual / hedgerow trees will be excluded from the working areas.
'*With this in mind, and particularly in the context of the Climate Emergency being declared throughout the*	Woodland creation, particularly where this forms connective links between existing woodland, will be

Comment	How and where considered in the ES
country, we believe that this is a landscape that could absorb and benefit from more woodland creation, for both conservation and production, with good landscape design and according to the principles of the UK Forestry Standard.'	considered within the final landscape design for the Proposed Development. An Outline LEMP has been provided as part of the DCO application (document reference 7.10).
'*Monitoring would be essential in all aspects of the project and a commitment to continued monitoring to ensure woodland establishment, with appropriate restocking regimes each year. Establishing Woodland Management Plans for any woodland creation would be expected*.'	Monitoring provision is addressed in **section 1.10**. Establishing woodland management plans would be included within the final On-CEMP(s).
Natural England	
'*Natural England does not hold local information on local sites, local landscape character, priority habitats and species or protected species. Local environmental data should be obtained from the appropriate local bodies. This may include the local environmental records centre, the local wildlife trust, local geo-conservation group or other recording society*.'	Noted. Local information has been obtained from the Devon Biodiversity Records Centre as set out in Volume 2, Appendix 1.2: Ecological Desk Study of the ES.
'*The assessment will need to include potential impacts of the proposal upon sites and features of nature conservation interest as well as opportunities for nature recovery through biodiversity net gain (BNG). There might also be strategic approaches to take into account*.'	Potential impacts on sites and features of nature conservation interest are addressed in **section 1.10** of this chapter. BNG is not a legal requirement for DCO projects until November 2025, meaning that it is not currently possible to CPO land for BNG purposes. Previous aspirations to achieve landscape scale habitat creation have not been possible as a result. There remains an aspiration to carry out substantial landscape scale habitat improvements and methods to achieve these are being explored and progressed. Once finalised with third parties the habitat baseline, loss and creation will be reported in a separate BNG assessment report accompanied by the statutory metric calculator.
'*Ecological Impact Assessment (EcIA) is the process of identifying, quantifying, and evaluating the potential impacts of defined actions on ecosystems or their components. EcIA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal. Guidelines have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM).*'	Noted. The guidance used for this chapter is that produced by CIEEM, as set out in **section 1.6**, of this chapter.
'*The Taw Torridge Estuary SSSI is notified for its overwintering bird interest and intertidal habitats. The composition of the SSSI bird assemblage alters through time as species populations fluctuate. Therefore, any native wetland bird species (in practice waders and wildfowl) present from September to March inclusive will be a legitimate part of the bird assemblage*.'	Noted. Migratory and wintering bird information is provided in Volume 2, Appendix 1.8: Breeding, Wintering and Migratory Bird Surveys, which shows very low levels of activity in the farmland fields crossed by the cable route. Update surveys are being undertaken in the 2024/2025 winter season to confirm the precautionary baseline used for this assessment remains appropriate. The 2024/2025 results will be reported in a bird survey report addendum.

Comment	How and where considered in the ES
'*The approach for the cable route upstream of the SSSI is to use Horizontal Directional Drilling (HDD) to take the cables below the River Torridge. Overwintering bird surveys are proposed and mitigation will be required for any potential disturbance identified. Measures will be required to ensure that no contamination or pollutants enter the estuary habitats as a result of the works*.'	The ES provides more detail of measures to avoid contamination/pollution incidents downstream on the estuary, although this will primarily be achieved by the proposed trenchless crossing method (see Volume 2, Chapters 3: Hydrology and Flood Risk and 4: Geology, Hydrogeology and Ground Conditions of this ES)
'*The ES should consider any impacts upon local wildlife and geological sites, including local nature reserves. Local Sites are identified by the local wildlife trust, geoconservation group or other local groups. The ES should set out proposals for mitigation of any impacts and if appropriate, compensation measures and opportunities for enhancement and improving connectivity with wider ecological networks. They may also provide opportunities for delivering beneficial environmental outcomes*.'	Impacts on local sites are set out in **sections 1.10** to **1.12**. Proposed mitigation is set out in **section 1.8** and **Table 1.14**. Protection measures including buffer zones between the working area and boundaries of wildlife sites will be set out in detail in the final On-CEMP(s)/LEMP(s) for the Proposed Development The section of the hedgerow network located within the Proposed Development has connectivity to locally designated wildlife sites and priority woodland habitat. The Proposed Development will ensure the reinstatement of all hedgerows (including like for like Devon hedges) along the Onshore HVDC Cable Corridor. Additional hedge creation (on currently fenced boundaries) is proposed alongside targeted enhancements of existing hedgerows (see Volume 2, Figure 1.4).
'*Applicants should check to see if a mitigation licence is required using NE guidance on licencing NE wildlife licences*.'	The assessment confirms that a European Protected Species licence will be required for hazel dormouse and under a precautionary assumes that an EPS licence will be required for the loss of at least one tree bat roost. The need for a bat licence is being informed by surveys in 2024 and 2025, with avoidance to be adopted wherever feasible. The draft dormouse EPS licence will draw upon survey data obtained in 2010, 2021/2022, 2023 and 2024 with the findings consistently showing dormouse populations widespread in the landscape crossed by the cable route. The licence will draw upon habitat status and connectivity as well as the survey data. This will allow the potential impacts of development to be confidently predicted and inform the mitigation measures to minimise temporary fragmentation. The trees within the DCO boundary have been subject to ground level assessment with additional and updated assessments ongoing in autumn 2024. All trees with bat roost potential that could be adversely affected will be subject to climbing surveys in autumn 2024. A draft licence and method statement will be prepared in relation to bat roosts that be affected, subject to detailed design. The draft EPS licence applications and method statements will be issued to Natural England for their assurance that the relevant species licences would be approved in principal subject to detailed design information and enable Natural England to issue a LoNI.

Comment	How and where considered in the ES
'*The ES should assess the impact of all phases of the proposal on protected species. Natural England 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*.'	The onshore ecology and nature conservation impacts associated with the construction, operation and maintenance and decommissioning phases of the Proposed Development are considered in **sections 1.10** to **1.12** of this chapter.
'*Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants*.'	Requirements for surveys are noted and addressed within individual survey reports (Volume 2, Appendices 1.1 – 1.11 of the ES). Additional surveys yet to be completed will also set out the guidance they are based upon.
'*An appropriate level habitat survey should be carried out on the site, to identify any important habitats present. In addition, ornithological, botanical, and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present*.'	Noted. The scope of surveys has been discussed with Natural England (see Volume 2, Appendix 1.12: DAS Meeting Notes of the ES). Further details of consultation are provide in **Table 1.5**.
'*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.'*	Noted. Historical data from previous surveys available are included in the baseline description, where relevant, see **section 1.7**. Volume 2, Appendices 1.1 – 1.11 of the ES describe the baseline data. The ES chapter takes a precautionary approach, in locations where it has not been possible to complete surveys along part of the Onshore Infrastructure Area prior to autumn 2024, presence has been assumed in the assessment where there is suitable habitat. Reasonable worst case potential impacts have been confidently predicted, which have informed the proposed mitigation measures detailed in **Table 1.14.**
'For priority habitats within the cable corridor, Natural England advises that the mitigation hierarchy is used.	The mitigation hierarchy has been used in relation to design of the Onshore HVDC Cable Corridor, as set out in **section 1.8** of this chapter.
'*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*.'	The revised desk study (Appendix 1.2 of this chapter includes details of ancient woodlands). Volume 4, Appendix 2.6: Tree Survey Report and Arboricultural Impact Assessment includes an assessment of impacts on ancient woodland and veteran trees.
'*The ES should use the statutory Biodiversity Metric together with ecological advice to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve a net gain*.'	Noted. See previous comments with regard to BNG.
'*Biodiversity Net Gain outcomes can be achieved on-site, off-site or through a combination of both. On-site provision should be considered first. Delivery should create or enhance habitats of equal or higher value.*	Noted. See previous comments on BNG.

Comment	How and where considered in the ES
When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g. Green Infrastructure Strategies or Local Nature Recovery Strategies where these are being prepared by local planning authorities.'	
'*If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances*.'	Noted. The landscape scheme for the Converter Site is shown in the Outline LEMP (document reference 7.10). Measures within it to provide mitigation for protected species are discussed at **section 1.8** below.

Preliminary Environmental Information Report

1.3.3 The preliminary findings of the EIA process were published in the Preliminary Environmental Information Report (PEIR) on 16 May 2024. The PEIR was prepared to provide the basis for statutory public consultation under the Planning Act 2008. This included consultation with statutory bodies under section 42 of the Planning Act 2008.

1.3.4 A summary of the key items raised specific to onshore ecology and nature conservation is presented in **Table 1.5,** together with how these issues have been considered in the production of this ES chapter.

Further Engagement

1.3.5 Throughout the EIA process, consultation and engagement (in addition to scoping and section 42 consultation) with interested parties specific to onshore ecology and nature conservation has been undertaken.

1.3.6 Torridge District Council have not provided direct discussion of the onshore ecology and nature conservation for the Proposed Development as yet. They have recently appointed a suitable ecological consultant to provide comments and engage with the process, and have indicated that they would like to have regular meetings to discuss updates. An initial meeting to introduce the Proposed Development was held on 30/09/2024.

1.3.7 Natural England have been consulted through their Discretionary Advice Service, with an initial meeting held on 29/07/2021 and a follow-up meeting setting out more detail on potential mitigation/BNG aspirations for the Proposed Development on 02/11/2023. Natural England's notes on these meetings are provided in Volume 2, Appendix 1.12. Engagement with interested parties specific to ecology and nature conservation will continue.

1.3.8 A summary of the key items raised specific to onshore ecology and nature conservation is presented in **Table 1.5,** together with how these issues have been considered in the production of this ES chapter.

Table 1.5: Summary of consultation relevant to this chapter

Date	Consultee and type of response	Issues raised	How and where considered in the ES
29/07/2021	Natural England; Response to initial Discretionary Advice Service (DAS)	Discussion to introduce the Proposed Development and review the scope of ecological surveys proposed as part of the onshore ecology and nature conservation chapter. Scope of surveys approved by Natural England (with request that bat activity surveys of compound areas as a minimum be included in scope of survey).	See **section 1.6** - Site Specific Surveys are detailed in **paragraph 1.6.4** and reported in Volume 2, Appendices 1.1-1.11 of the ES.
02/11/2023	Natural England, response to further DAS	Discussion to provide updates to the Proposed Development, including refinements in design. This also include a review of the potential approach to BNG requirements. The aspiration of the Proposed Development to provide landscape-scale habitat creation felt appropriate by the Natural England team, and proposals to use woodland creation (possibly including Atlantic wet woodland elements) to form links between existing woodlands appeared to tie in with aspirations from the UNESCO North Devon Biosphere Reserve Nature Recovery Plan.	The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. Mitigation is set out in **section 1.8** and the Outline LEMP (document reference 7.10). This includes habitat creation at the Converter Site, including features which increase connectivity with habitat features beyond the site. This also provides mitigation habitat for protected species such as dormice, bats and breeding birds. This approach is also present in habitat creation areas to be formed in blocks to either side of the Torridge Estuary and further hedgerow enhancements along the Onshore HVDC Cable Corridor.
20/06/2024	Natural England discussion of need to remove BNG from proposals and update on access for surveys/future	Removal of BNG from Proposed Development due to constraints in acquiring land outside of order limits and complications that as BNG is not yet mandatory for DCO projects, no opportunities for compulsory acquisition. Commitment for Proposed Development to explore alternative opportunities for BNG enhancements as part of the development. Review of baseline survey information available to date and proposal to provide additional confirmative survey information when data is available. NE	The approach to biodiversity enhancement is set out in **section 1.8**. Baseline survey information is provided in **section 1.7** of this chapter. Issues relating to protected species licensing are set out in **section 1.8** and **1.10** of this chapter.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
	survey programme	focussed on the need to provide sufficient information to allow NE to provide confirmation LONI for any protected species licensing which will be required. Licensing for dormice required and some licensing for impacts on bat roosts in trees being investigated.	
July 2024	Resident – Section 42 response	Concern for impact on wildlife – animals, birds, lapwings, foxes etc.	Volume 2, Chapter 1 Onshore Ecology and Nature Conservation (this chapter), addresses impacts on wildlife and ecology. The impacts during the construction, operation and maintenance and decommissioning phases of the Proposed Development are considered in **sections 1.10, 1.11** and **1.12**.
July 2024	Resident – Section 42 response	Page 32 of the Booklet notes that Xlinks invites comments on opportunities to enhance the local environment. I would strongly recommend and urge that Xlinks consider use of the land south of Gammaton Cross as part of their LEMP so as to achieve a net gain in biodiversity, etc. That would seem to assist the planning process for Xlinks and would avoid that land being offered for an alternative form of industrial development and/or some other converter station in the future. If that land then had some reasonable and generally acceptable level of public access it could also benefit the local community.	**Section 1.8** of this chapter identifies mitigation measures adopted as part of the Proposed Development, including landscape design and habitat creation. It is not possible to enforce significant habitat creation on land which will be returned to original landowners post installation of cabling, for example. It has not yet been possible to reach agreement with landowners on some areas under consideration for habitat enhancements.
July 2024	Category 1&2 – Section 42 response	I would like to ensure that the effects of the X-links project on biodiversity and local communities are fully considered and compensated for and that the cable route becomes an opportunity for the local community rather than something that is just imposed on us. Very limited attention seems to have been given to this in the consultation documents (or at least, I have not found it immediately obvious, so please correct me if I have missed it).	Effects on biodiversity are addressed within this chapter (Volume 2, Chapter 1 Onshore Ecology and Nature Conservation). Biodiversity mitigation and enhancement has been considered and potential on-site opportunities are presented in Volume 2, Figure 1.4. Volume 1, Chapter 3: Project Description also provides detail on the ongoing engagement with North Devon Biosphere and landowners in relation to off-site enhancement.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
July 2024	Category 1&2 – Section 42 response	You state on your website that you aim to deliver a net positive environmental impact for biodiversity and though I can find reference to biodiversity net gain at the converter site, along the cable route, reinstatement to existing conditions seems to be the approach. As we are one of the most biodiversity depleted nations on earth, I feel that to aim for reinstatement to what are effectively wildlife deserts in some cases is not acceptable. The stated aim should be to create an enhanced wildlife corridor around Bideford to make the most of the opportunity.	Approach to biodiversity mitigation and enhancement is set out in **section 1.8** of this chapter. Potential biodiversity opportunities are presented in Volume 2, Figure 1.4. Details regarding the ongoing engagement with North Devon Biosphere and landowners in relation to off-site biodiversity enhancement is included in Volume 1, Chapter 3: Project Description.
July 2024	Environment Agency – Section 42 response	The impacts to fish species have not been assessed. Potential impacts on fish species include noise, silt disturbance and physical disturbance within channel, especially during spawning, juvenile development or migration activity. Drilling can also impact fish due to noise and vibrations. Electromagnetic fields from the cables can impact on the behaviour and migration of fish.	Impacts on fish have been considered. Baseline fish populations are set out in **section 1.7**. Mitigation in **section 1.8** and impacts in **sections 1.10**, **1.11** and **1.12**.
July 2024	Environment Agency – Section 42 response	Issue - The proposal to reinstate agricultural habitats of low biodiversity value, e.g. improved grassland and arable leys, on a like-for-like basis following construction, lacks ambition to improve and enhance agricultural habitats for biodiversity. Impact - Limited habitat creation or enhancement. Solution - Prepare habitat creation plans to restore agricultural habitats with more biodiverse habitats such as species-rich grasslands.	The creation of enhanced habitats along the Onshore HVDC Cable Corridor is not considered in detail in this chapter, as the intention is to return land to the current landowners to continue their agricultural operations. Reinstatement and enhancement of hedgerows is addressed in **section 1.8**. However, Volume 2, Figure 1.4 presents the opportunities for biodiversity mitigation and enhancement within the Onshore Infrastructure Area.
July 2024	Environment Agency – Section 42 response	Table 1.14 Issue - Lack of clarity regarding the proposed buffer distances e.g. for construction compounds away from areas of habitat of high potential value to otters. Impact - Potential to disturb nocturnal protected species such as otters and bats.	Where possible, the routing and design of the Onshore HVDC Cable Corridor has avoided habitat of significant value to otters. The main watercourses (Kenwith Stream, Jennett's tributary and the River Torridge) have trenchless techniques proposed to install the cables below the watercourse. Construction work sites, including trenchless installation would be located

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		Solution - Implement and maintain a 10m buffer strip (measured from the top of the riverbank), which excludes construction compounds, fencing and lighting. Erect exclusion fencing at terrestrial-edge of buffer strip. Sow bare buffer-strips with a species-rich grass and wildflower mix, to reduce nutrient load and improve biodiversity value. Additional information: Inadequate buffer strips along watercourses can also: • increase vulnerability of watercourses to pollution from mobilised sediments; • prevent vegetation establishment which would otherwise stabilise and protect the bank. Table 1.14 Issue - Heras fencing covered in camouflage netting, used to create Temporary Flight Lines (TFL) to fill hedgerow gaps, can be blown over, creating gaps. Impact - Gaps in hedgerows reduce connectivity and fragment the landscape. This can impact species that are reliant on hedgerows e.g. Bats. Solution - Use a more robust/complex TFL. The UK Bat Mitigation Guidelines (2023) suggest alternative layouts, such as the re-placing of a single-line of Heras fencing with triangular bracing, to ensure resistance to high-wind speeds. Other alternatives include willow fencing or trees in IBC containers. TFLs should be at least 2 m high and without gaps.	a suitable distance away from areas of habitat of high potential value to otters to minimise disturbance levels. Mitigation measures and treatments are recommended within **section 1.8**. This includes measures to reduce disturbance (e.g. lighting disturbance) to species, such as bats, which would be implemented through the On-CEMP(s). Details of mitigation to maintain connectivity across the Onshore HVDC Cable Corridor will be set out in the final On-CEMP(s). An Outline On-CEMP has been provided as part of the DCO application (document reference 7.7).
July 2024	Environment Agency – Section 42 response	Issue - Impacts to fish during construction, operation and decommissioning have not been considered. Impact - Potential impacts on fish species include noise, silt disturbance and physical disturbance within channel, especially during spawning, juvenile development or migration activity. HDD can also impact fish due to noise and vibrations. Electromagnetic fields from the cables can impact on the behaviour and migration of fish. Solution - Include fish as a key receptor in Table 1.12, and consider impacts to fish in sections 1.8, 1.9 and 1.10.	Impacts on fish are addressed in **sections 1.10**, **1.11** and **1.12** of this chapter. Further detail on potential electromagnetic effects are addressed in Volume 1, Chapter 3 Project Description (specifically in relation to HDD).

Date	Consultee and type of response	Issues raised	How and where considered in the ES
July 2024	Environment Agency – Section 42 response	Issue - No fish surveys have been conducted in any of the main or minor watercourses. There is the potential for protected fish species to be present in the minor watercourses and tributaries of the River Torridge. Impact - Risk of unmitigated damage to this protected species. Solution - Fish survey data on necessary watercourses is required to establish a baseline, and to inform impact assessment and mitigation measures (such as timing restrictions).	Fish data from EA online resources have been used to identify fish species present in the Torridge catchment and Taw/Torridge Estuary. This is set out in **section 1.7** of this chapter.
July 2024	Environment Agency – Section 42 response	Issue - Lack of clarification (Vol 1, Chapter 2) on whether aquatic macroinvertebrate monitoring upstream and downstream of a watercourse crossing point is to be used. Impact - Silts and other potential pollution from surface crossings may be undetected. Solution - Continue to monitor the macroinvertebrate population approx. 50 m upstream and downstream of a watercourse crossing point where invasive techniques are used. Issue - Limited macroinvertebrate surveys and low species diversity results due to dry weather and low water levels. Impact - Potentially inaccurate calculated results, and the risk that protected or notable species may have been missed. Solution - Repeat aquatic macroinvertebrate survey outside of the summer period (i.e. spring or autumn) to provide a suitable baseline prior to construction.	Further aquatic invertebrate surveys have been undertaken, which are detailed within Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring of Watercourses to be Crossed of the ES. Mitigation measures and proposed monitoring is set out within section **1.8** and the Outline On-CEMP (document reference 7.7).
July 2024	Environment Agency – Section 42 response	Volume 2, Appendix 1.6: Otter and water vole survey Issue - Report has been redacted. Impact - Unable to comment on results, survey details and status of water voles or otters, due to redacted report. Solution - Provide the EA with a full non-redacted report, to allow comments to be made.	Information on the specific location of places of rest and other places used by sensitive species have been provided as confidential appendices submitted to the Planning Inspectorate. This includes the following documents: • Volume 1, Appendix 1.6: Otter and Water Vole Survey. • Volume 1, Appendix 1.7: Badger Survey.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
			Public versions have also been provided, although any survey data relating to presence and locations of species has been redacted. The confidential documents will be provided to the Environment Agency.
July 2024	Environment Agency – Section 42 response	Issue - We support report's recommendation that watercourses should be returned to their baseline condition if impacted by works, but there is no recorded commitment to deliver this. Impact - Watercourse crossings could result in modification to their morphology, e.g. altering the structure or gradient of the banks or increasing watercourse encroachment. Solution - Provide commitment to restore watercourses to baseline conditions, (or provide suitable mitigation elsewhere along the watercourse should the works result in permanent changes).	Methods for crossing watercourses are detailed in Volume 1, Chapter 3 Project Description. Further details are set out in Volume 2 Chapter 3, Hydrology and Flood Risk and Chapter 4 Geology, Hydrogeology and Ground Conditions.
July 2024	Littleham and Landcross Parish Council – Section 42 response	The Council asks that Xlinks ensures that the effects of the project on biodiversity and local communities is fully considered and due compensation considered.	This ES chapter considers effects on biodiversity in **sections 1.10, 1.11** and **1.12**.
July 2024	Littleham and Landcross Parish Council – Section 42 response	The Council asks that the cable route becomes an opportunity for the enhancement of improved biodiversity, introduction of hedgerows and possible footpaths and cycle ways.	Creation of enhanced habitats along HVDC cable route not considered in detail in this chapter, as intention is to return land to current landowners to continue their agricultural operations. Reinstatement and enhancement of hedgerows is set out in **section 1.8**.
July 2024	Littleham and Landcross Parish Council – Section 42 response	The Council wishes to point out that the UK is one of the most biodiversity depleted nations on earth. A stated aim of Xlinks should be to "create an enhanced wildlife corridor around Bideford to make the most of the opportunity". In the North Devon Biosphere Nature Recovery Plan, priority actions include safeguarding and enhancing existing areas of wildlife-rich habitats and restoring / wilding /creating new areas to make larger and better connected habitat networks;	The creation of enhanced habitats along the Onshore HVDC Cable Corridor is not considered in detail in this chapter, as the intention is to return land to the current landowners to continue their agricultural operations. Reinstatement and enhancement of hedgerows is addressed in s**ection 1.8**. However, Volume 2, Figure 1.4 presents the opportunities for biodiversity mitigation and enhancement within the Onshore

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		The Environment Act 2021 (section 102) states that every public body, including Town and Parish Councils, has a duty to conserve and enhance biodiversity. Goal 1 of the Government's Environmental Improvement Plan 2023 is to' achieve a growing and resilient network of land, water and sea that is richer in plants and wildlife' by creating and restoring wildlife habitats and increasing interconnections to boost natural resilience i.e. wildlife corridors. This should involve detailed consultation and agreement with landowners along the route. The Council considers that the Xlinks strategy should be to convince the local community that the disruption and considerable inconvenience of the project will be worthwhile because of the ultimate benefits to local residents. It is critical that any biodiversity net-gain is along the corridor, rather than in other areas.	Infrastructure Area. The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. Approach to biodiversity enhancement is set out in **section 1.8.** This includes habitat creation at the Converter Site, including features which increase connectivity with habitat features beyond the site. This also provides mitigation habitat for protected species such as dormice, bats and breeding birds. This approach is also present in habitat creation areas to be formed in blocks to either side of the Torridge Estuary and further hedgerow enhancements along the HVDC cable route. See **section 1.8** for mitigation and enhancement measures.
July 2024	Resident – Section 42 response	The Xlinks proposal for the UK cabling and connection to the grid deliberately violates both a UNESCO Biosphere and a formally protected AONB. • The project runs directly through a UNESCO Biosphere and UK AONB, neither of which are mentioned in the consultation booklet so I assume that this must be an error as obviously Xlinks would want consultees to be fully informed. Do you consider it would be fairer to restart the consultation disclosing all material information to allow consultees to make informed comments? • The documents provided by Xlinks claim to have looked at a number of alternative locations for the landfall of the undersea cables however these are very high level reports lacking any kind of detail and quote difficulties	The location of the Proposed Development in relation to designated spaces is set out in **section 1.7** and in **Appendix 1.2**. The Proposed Development does cross the National Landscape where it makes landfall and is entirely within the North Devon Biosphere Reserve. However the proposed Onshore HVDC Cable Corridor avoids impacts on all statutorily-designated site for nature conservation and is an underground route with full reinstatement of hedges and existing land uses. Proposed habitat enhancements along the Onshore HVDC Cable Corridor and at the Converter Site will provide

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		or concerns that are not supported or qualified. It would be interesting to see the fully costed and engineering supported decision making process. • Clearly the most appropriate place for landfall would be in an industrial area such as Port Talbot, particularly as the steel works will be converting to electricity as an energy source, or alternatively connecting to the grid at Hinkley B, on the coast and already an industrial developed site (also claiming to be able to generate 7% of UK electricity demand) which puts into context the ridiculous amount of power that will be running through this beautiful Devon village if the scheme goes ahead. • It is frankly unbelievable that an organisation that lists such an array of "experts" in the fields of renewable energy, major infrastructure projects and raising venture capital cannot offer a solution that does not upset and destroy the formally protected beautiful natural environment. • If a project is not financially viable without breaching formally protected areas (and sucking up government support) then in essence it is not financially viable at all. Shareholders are profiting from destruction and taking funds from the British public without their consent.	compensatory habitat to mitigate for impacts on protected species. Potential landscape impacts are considered within Volume 4, Chapter 2: Landscape, Seascape and Visual Resources of the ES. Alternatives to the Proposed Development are considered in Volume 1, Chapter 4, Need and Alternatives.
July 2024	Resident – Section 42 response	Our 9 year old son has grown up here at Woodville, it's the only home he has known, and he has a particular passion for wildlife and nature. We make great use of the Woodville Farm woods filming the local wildlife: deer, foxes, badgers, tawny owls, stoats, hares, a huge variety of birds, and a wonderful diversity of insect life. My son has screened these films on a number of occasions, and loves watching how the young animals develop over time using motion triggered wildlife cameras, as do we all.	This chapter considers impacts on wildlife and woodland habitats in **section 1.10.**
July 2024	Resident – Section 42 response	The proposed cable crosses this wildlife corridor and looks like it will pass through this small wooded area containing a natural spring, and a small boggy biome as well as many ancient trees and hedges supporting rich biodiversity. It would be a devastating loss to the local biodiversity if this small wooded area was compromised in any way or the woodland corridor was permanently disrupted.	Impacts on this small woodland/former trackway are included in **section 1.10** of this chapter.
July 2024	Resident – Section 42 response	In discussion with your team I learnt that in sensitive areas such as this, the gap made to accommodate the cable is limited to just 12 metres and every effort will be made to replace the lost biodiversity with like-for-like species	Impacts on this small woodland/former trackway are included in **section 1.10** of this chapter.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		once the cable is buried. This is certainly good to hear, but I wonder if there mightn't be a potential argument to be made in considering moving the cable and haul road a short distance (10-20 metres) to the south-west so that it misses/bypasses this small wooded area/wildlife corridor?	
July 2024	Resident – Section 42 response	Hedge disturbance is of concern to us. In the PEIR, Volume 2, Chapter 1: Onshore Ecology and Nature Conservation, it is noted: 1.5.13 The hedges which form most field boundaries are generally species rich and well maintained. They play an important role in providing wildlife corridors linking fragmented habitats. Hedgerows are important for species such as bats, dormice and farmland birds. 1.5.14 Given the predominantly species-rich nature of the hedges along with their banked construction (virtually all the hedges encountered were of typical banked 'Devon hedge' format), the hedges affected by the Proposed Development are all likely to be classed as 'Important', as defined under the Hedgerow Regulations1997. 1.5.15 Irrespective of whether an individual hedge has been identified as species rich, species rich with trees or species poor, the network of hedges represents an important ecological feature through the landscape of north Devon. Additionally, potential for the presence of dormice cannot be discounted from all hedgerows affected by the Proposed Development, which would cause them to be considered "important" under the Hedgerows Regulations 1997. Therefore, all hedgerows have been considered as IEFs (Important Ecological Features) at the County level, irrespective of their species content and structure. Therefore in consideration of potential future increased traffic flow and damage to precious hedgerow, we would only support a carefully considered minimal widening just at particular pinch points and bends, as was being discussed at the 1st June consultation. We would be keen to be included in discussions about any plans for widening at the Gammaton Road junction adjacent to Woodville farm in particular, due to its immediate proximity and impact to us.	Impacts on hedgerows are addressed in **section 1.10**, **1.11** and **1.12** of this chapter. Details for the need to provide road improvements is set out in Volume 2, Chapter 5, Traffic and Transport.
July 2024	Devon Wildlife Trust (DWT) –	DWT welcomes the open nature of the discussions held around this project, with clear documentation, webinars and meetings. However, earlier contact	Noted.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
	Section 42 response	from the project would have enabled greater input from DWT. As a small organisation with limited resources, responding to large infrastructure projects of this sort is a challenge and as such our response is necessarily limited.	
July 2024	DWT – Section 42 response	DWT welcomes the approach of broadly re-using the onshore route developed through discussions with stakeholders for the Atlantic Array project. This project took a collaborative approach to determining the onshore cable route to avoid or minimise impact to sensitive environmental features.	Noted. Baseline information from the Atlantic Array project is used in this chapter (**section 1.7**) to assist in identifying baseline conditions where access for current surveys has not been available.
July 2024	DWT – Section 42 response	We welcome the proposals to enhance habitats and the commitment to 'a greater than 10% net gain'. DWT advocates that projects set a minimum 20% net gain to ensure action to reverse the decline of nature, particularly in areas with high nature value as found in this area. The opportunity to create a linear corridor of species-rich habitat across the whole site (discussed in point 5 below) would make this very achievable.	The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. Approach to biodiversity enhancement is set out in **section 1.8.** This includes habitat creation at the Converter Site, including features which increase connectivity with habitat features beyond the site. This also provides mitigation habitat for protected species such as dormice, bats and breeding birds. This approach is also present in habitat creation areas to be formed in blocks to either side of the Torridge Estuary and further hedgerow enhancements along the HVDC cable route.
July 2024	DWT – Section 42 response	It is unrealistic or inaccurate to assess Operational Effects as beneficial except where a greater than 10% (ideally 20% or greater) net gain can be demonstrated.	Assessment of operation and maintenance impacts are addressed in **section 1.11** of this chapter. Under a precautionary approach the Operational Effects (at the Converter Site) are assessed as having negligible magnitude and of negligible significance for the majority of IEFs with replacement of habitats that will be lost and the establishment of the landscaping which will

Date	Consultee and type of response	Issues raised	How and where considered in the ES
			provide aternative habitat for species using the existing habitats in this location. The original conclusion of a beneficial was reached due to a suite off-site habitat creation opportunities that were available to the Applicant, but which are no longer possible. The Applicant is required to return the land used for the construction of the Onshore HVDC cable corridor to the existing agricultural use. Wherever possible, localised biodiversity enhancements are being brought forward within the Proposed Development, with the converdion of agricultural land into neutral grassland or woodland. More broadly the Applicant is in open discussions with North Devon Biosphere about off-site habitat compensation opportunites; for example supporting culm grassland restoration which could achieve biodiversity compensation through targeted interventions benfiting a habitat of regional/national importance).
July 2024	DWT – Section 42 response	Habitat restoration ecology is a niche expertise. While we recognise the intention to have an Ecological Clerk of Works present during the construction phase, a habitat restoration specialist should be employed to oversee all restoration works and ensure it is effectively managed through its key early phases with long term management secured.	Noted. As set out in **section 1.8** of this chapter, contractors with previous experience of successful Devon hedgerow creation would be sought to undertake hedge reinstatement and creation works. This will be detailed in the On-CEMP(s).
July 2024	DWT – Section 42 response	Results of all ecological surveys and monitoring should be shared with Devon Biodiversity Records Centre in appropriate format to inform future conservation activities.	Noted.
July 2024	DWT – Section 42 response	Access has not been available to carry out wildlife surveys on a number of areas within the proposed Draft Order limits. While we recognise the efforts to survey around these sites and examine historic records (e.g. 2013 Atlantic Array studies), it is imperative that these sites are fully surveyed prior to any works commencing. This is particularly important at large components of the	As set out in **section 1.7,** additional surveys are intended to be completed and submitted following the DCO application, in addition to pre-commencement surveys for particularly mobile species.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		project such as the Converter site, Alverdiscott Substation and the landfall site.	
July 2024	DWT – Section 42 response	Monitoring of species and habitats should be ongoing during construction phase to ensure impacts from noise, light, disturbance, and pollution can be understood and managed to avoid/minimise potential impacts. For example, additional screening may be required at HDD sites if noise or light impacts are greater than anticipated.	Mitigation and monitoring measures are detailed within the Outline On-CEMP (document reference 7.7) and Outline LEMP (document reference 7.10).
July 2024	DWT – Section 42 response	We welcome the route design which avoids all designated sites. However, where designated sites (including County Wildlife Sites and Unconfirmed Wildlife Sites) lie adjacent to the proposed Draft Order limits, we would expect a suitable buffer of activities to prevent damage and disturbance of the setting of these sites.	The implementation of buffers is discussed in **section 1.8** of this chapter.
July 2024	DWT – Section 42 response	In addition, consideration should be given to avoiding/minimising potential impacts on sites downstream of works. For example, ensuring Culm grassland and wet woodland sites aren't impacted where works are occurring in the catchment upstream.	Impacts on downstream habitats are considered in **section 1.10** of this chapter, with additional information in Volume 2, Chapter 3: Hydrology and Flood Risk, and Volume 2, Chapter 4: Geology, Hydrogeology and Ground Conditions.
July 2024	DWT – Section 42 response	Where designated sites (including County Wildlife Sites and Unconfirmed Wildlife Sites) lie adjacent to the proposed Draft Order limits, carrying out monitoring/survey of these sites to understand condition would provide public benefit.	Regular monitoring of County Wildlife Sites and Unconfirmed Wildlife Sites will be undertaken during construction period and for a period of five years thereafter. Mechanisms will be put in place to ensure that any unexpected impacts resulting from construction of the Proposed Development will be remediated. See **section 1.8** of this chapter.
July 2024	DWT – Section 42 response	The project will impact hedges at a landscape scale. Ensuring connectivity is retained at a landscape scale for mobile species (including bats and dormice) during the seven years of construction will be critical. This can be achieved through a strategic plan which staggers hedge-breaks and ensures that multiple alternative routes are always available to mobile species at any given time.	The measures to mitigate for hedgerow impacts are set out in **section 1.8** of this chapter. Phased hedgerow clearance will be employed where practical, to comply with best practice for dormice (and ensure minimum impact on nesting bids) is proposed. Advanced hedgerow creation is to be included in the detailed design and programme.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
July 2024	DWT – Section 42 response	Where impacted hedgerows contain multiple older trees or is a hedge of particularly high ecological value, consider employing hedge translocation techniques (moving the entire hedge intact) to retain features for restoration to original position following works.	Where feasible, this approach will be considered, as set out in **section 1.8** of this chapter.
July 2024	DWT – Section 42 response	While we welcome the intention to provide artificial bat corridors at hedge-breaks through the use of camouflaged Heras fencing, we would welcome evidence of the effectiveness of this approach. Where this is not forthcoming, monitoring to understand efficacy should be carried out with other innovative approaches considered if this is not effective.	This approach is similar in detail to methods detailed in the Bat Mitigation Guidelines (CIEEM, 2023). Detail of this mitigation is set out in **section 1.8**. Monitoring provision is set out in **section 1.16** of this chapter.
July 2024	DWT – Section 42 response	We disagree that approaches to maintain bat corridors at hedge-breaks is considered unnecessary during winter months. Weather conditions in SW England mean bats are active very late in the year and often do not hibernate. Additionally, where bats are active in colder months, ensuring landscape-scale connectivity is essential as energy efficiency is critical to survival. We advocate that any measures for bats are deployed year-round.	Temporary measures to be kept in place throughout the construction period – see **section 1.8** of this chapter.
July 2024	DWT – Section 42 response	Large hedge trees (standards) are important as bat roosts but also as perches and navigation aids for bats. While we welcome the intention to retain veteran trees and to save old tree stools for re-planting, large standards should be planted and protected as part of restoration works.	Hedgerow enhancements beyond the reinstatement of damaged sections will offer opportunities for this, as set out in **section 1.8** of this chapter.
July 2024	DWT – Section 42 response	While connectivity measures have been considered for bats, none have been considered for dormice. Consider the use of temporary dormouse bridges at hedge-breaks to facilitate safe crossing. These could be attached to the top of Heras fencing bat mitigation.	Mitigation for dormice at hedgerow breaks consists of maintaining 'bridges of branches and brash' across the selected hedgerows outside of working hours for the duration of construction to maintain habitat connectivity for the dormouse population. Species protection through phased clearance as set out in dormouse mitigation guidance. These are described in **section 1.8** of this chapter. Use of the brash bridge will be subject to monitoring to collect evidence for their value for dormouse.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
July 2024	Natural England – Section 42 response	Table 1.7 of Volume 2 Chapter 1 Ecology and Nature Conservation of the Preliminary Environmental Information Report (PEIR), indicates that impacts to Internationally Designated Terrestrial Sites have been scoped out of further assessment. No Impact Risk Zone thresholds were triggered for Braunton Burrows Special Area of Conservation (SAC) or Tintagel Marsland Clovelly Coast SAC. Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks posed by development proposals to designated sites. Based on the information provided and our professional judgement, Natural England concurs with the conclusion that the proposed cable route is unlikely to have a significant effect on terrestrial SACs/SPAs/Ramsar and can therefore be screened out from requiring further Habitat Regulation Assessment.	As set out in **section 1.3** of this chapter, impacts on European sites has been scoped out of this assessment.
July 2024	Natural England – Section 42 response	Frac-out: Natural England advises that a bentonite management plan is required, to not only demonstrate how drilling mud with be contained and disposed of, but also remedial actions should a frac-out occur during HDD. The management plan should not only consider bentonite reaching the sediment surface, but also potential contamination of groundwater	Outline Bentonite Breakout Plan has been included as part of the DCO application (document reference 7.20).
July 2024	Natural England – Section 42 response	Natural England advises that the SSSI is notified for its overwintering bird interest and intertidal habitats. The composition of the SSSI bird assemblage alters through time as species populations fluctuate. Therefore, any native wetland bird species (in practice waders and wildfowl) present from September to March inclusive will be a legitimate part of the bird assemblage. Natural England notes that the cable route will make landfall at the North Devon coast and then follow a route that will involve crossing the River Torridge at Hallsannery, upstream of this SSSI, ending at the converter station at Alverdiscott. The approach for the cable route at the coast and upstream of the SSSI is to use Horizontal Directional Drilling (HDD) to take the cables below the foreshore and below the River Torridge. Bird Assemblage: Natural England advises that birds associated with the SSSI have been recorded foraging along the coast around the landfall site and in the fields behind – notably curlew (tagged on the Skern). The SSSI high tide	Additional bird surveys are ongoing to in autumn 2024 and winter 2025 to provide additional data on bird activity in the Project Development. This is set out in **section 1.7** of this chapter.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		roost study (2018) recorded a significant Lapwing high tide roost (Iron Bridge) just upstream of the cable route crossing which corresponds with the numbers of lapwing recorded in the applicants 2021/22 surveys. Anecdotal evidence from WEBS volunteers in 2016 as a precursor to this study indicated that the surrounding fields supported lapwing, curlew and snipe at Hallsannery; and gulls, curlew, green sandpiper and redshank at Tennacott Lodge. Please see point (c) below. Abundance and Distribution: Overwintering bird surveys were carried out in 2021/22 to cover the autumn passage and the winter period across the coastal landfall site and estuarine area. Significant numbers of birds were not recorded during that over wintering period, although good numbers of curlew and lapwing were recorded (Table 1.4 and 1.5 of Volume 2 Appendix 1.8) which are two of the key three species for the SSSI. Natural England's Best Practice Guidance for Offshore windfarm including cabling is that 2 years of overwinter bird data should be collected to consider inter annual variability. Given the age of the data collected to support the Application we advise that a further passage and over winter period should be collect in 2024/25 to support the Application. The passage/wintering bird season should be taken as September to March inclusive rather than November to February as set out in Table 1.14 of Appendix 1.8.	
July 2024	Natural England – Section 42 response	Monitoring: In addition to the second year of surveys, when considering breeding, passage and wintering bird surveys, Natural England notes that the survey effort does not include nocturnal surveys therefore, owls or nocturnal flocks of golden plover/lapwing may have been missed. This is primarily a concern regarding the Alverdiscott Substation site/Connection Development and associated construction compound since works are likely to be present for 6 years and some degree of light disturbance may persist over the lifetime of the project. It may be possible to assume that such birds are present and look to improve habitat elsewhere in the vicinity to support any displaced birds e.g. rough grassland corridors provided for Barn Owl or muck spread on nearby arable fields to encourage invertebrates for plovers.	As set out in **section 1.7** of this chapter, the wintering bird survey is being repeated between autumn 2024 and winter 2025 and the breeding bird survey of the Proposed Development will be repeated in spring and summer 2025. Nocturnal surveys from part of the survey method. Existing assessment is provided in **section 1.10**, **1.11** and **1.12** of this chapter.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		Section 1.10 results of the overwintering bird surveys at the landfall. It is not clear whether the survey covered the fields behind the cliff tops. As referred to earlier in this letter, curlew (tagged on the Skern) were recorded using fields in this area and therefore if not already surveyed we advise that further consideration is given to these fields.	
July 2024	Natural England – Section 42 response	Bird Disturbance: Noise and lighting can lead to both the displacement and disturbance of wildlife. Potential impacts will need to be fully considered in the Application and mitigation measures will be required to avoid noise and lighting impacts on overwintering birds using the saltmarsh/mudflat habitats, the coast and surrounding fields for feeding and resting. Therefore, we advise a working window of 1st April to 31st August of any given year within the boundary of the SSSI and supporting habitat. If the passage and overwintering period can't be avoided then we advise that noise and lighting mitigation measures should be secured through a Construction Environment Management Plan (CEMP) to avoid disturbance to ecological receptors within the site and beyond the site boundary during construction and will need to be considered in greater detail than currently presented, as part of the application. Supporting habitats: Natural England advises that measures will be required to protect the natural environment during construction. This includes best practice mitigation in line with the Environment Agency's Pollution Prevention and Control Guidelines to avoid pollution incidents and adverse impacts on the SSSI. We note the detail set out in section 1.8.34 (Appendix 3.2). Converter Station: If the passage and overwintering period can't be avoided then Natural England advises as a precautionary measure that all mitigation measure for birds should also be consider for the converter station/sites as these fields may be of value to passage and overwintering species such as golden plover and lapwing from the SSSI.	Impacts of disturbance to species, resulting from light and noise, have been considered within **sections 1.10**, **1.11** and **1.12** of this chapter. Noise and lighting reduction measures will be detailed in the final On-CEMP(s), as will measures to prevent water and airborne contamination of adjacent sites and habitats. This will apply to all working areas including the Landfall, Onshore HVDC Cable Corridor, highways improvements and the Converter Site. The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. Approach to biodiversity enhancement is set out in **section 1.8.** This includes habitat creation at the Converter Site, including features which increase connectivity with habitat features beyond the site. This also provides mitigation habitat for protected species such as dormice, bats and breeding birds. This approach is also present in habitat creation areas to be formed in blocks to either side of the Torridge Estuary and further hedgerow enhancements along the HVDC cable route.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		Biodiversity Net Gain: Natural England advises that consideration could be given to enhancements for overwintering birds which could feed into the delivery of Biodiversity Net Gain. This could include features suitable for wintering waders and wildfowl, such as scrapes or lagoons with island refuges. Fish: Fish are not a notified feature of the SSSI, but the River Torridge is important for several migratory and resident species protected by legislation. Information produced to support the Appledore clean maritime innovation centre planning application (1/1179/2023/LA. AQASS Ltd data and literature review Jan 2024) highlighted the presence of Allis Shad, Twaite Shad, Bass, European eel, Salmon and Trout. Noise, pollution and sediment disturbance are potential impacts.	Fish baseline is described in **section 1.7** of this chapter and impacts on fish are considered in **sections 1.10**, **1.11** and **1.12** of this chapter.
July 2024	Natural England – Section 42 response	Natural England notes that Volume 2 Chapter 1 Ecology and Nature Conservation considers potential disturbance impacts to wetland birds within Kynoch's Foreshore Local Nature Reserve (LNR). However, Table 1.6 should be updated to include duration of impact and all sections including 1.4.13 should include all data sources, including Birdtrack, if it hasn't already done so. Natural England advises that further consideration should then be given to adoption of mitigation measures to reduce impacts to the features of this site.	Birdtrack data is included in the Ecological Desk Study (Volume 2, Appendix 1.2), which has been used to inform the assessment presented in this ES chapter. Mitigation measures relevant to onshore ecology and nature conservation are included within **section 1.8** of this chapter.
July 2024	Natural England – Section 42 response	There may be more opportunities along the cable route for landscape and ecological enhancements to reinforce landscape character and the NL special qualities.	Mitigation measures relevant to onshore ecology and nature conservation are included within **section 1.8** of this chapter. This includes the reinstatement and enhancement of hedgerows along the Onshore HVDC Cable Corridor, which is presented on Volume 2, Figure 1.4.
July 2024	Natural England – Section 42 response	We recommend that opportunities are taken to work closely with the North Devon NL Partnership to further reduce landscape and visual impacts where possible. c) Mitigation: Much of any proposed additional mitigation, other than HDD, seems to be deferred to the proposed outline Landscape and Ecological Management Plan (LEMP). However, it is unclear at what stage the LEMP and the design code will be produced. This will be needed at an early stage so that	Discussions with North Devon NL Partnership are ongoing. Impacts on hedgerows are set out in **section 1.8** of this chapter. An Outline LEMP has been prepared and submitted with the application (document reference 7.10).

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		Natural England and the National Landscape Partnership can assess the suitability of the proposals. Therefore, we advise that an Outline LEMP is included with the application. Should there not be the technical feasibility to undertake mitigation that has been proposed at a high level at this stage, then assessment of significance of impacts may need to be revisited. Additionally, this could impact on the detail within the future DCO application. Without seeing further detail and feasibility of mitigation proposals, in particular for the pipeline construction and remediation, the scale and magnitude of impacts cannot be determined. Issues such as loss of hedgerows with reinstatement and any tree planting must be considered within the feasibility of reinstating these features, for example, tree planting cannot take place in the same location as the pipeline. This may lead to a long term and potentially irreversible impact on the special qualities of the North Devon NL. Time for reinstatement including the growth rate of reinstatement vegetation needs to be added to the timescale for the temporary nature and reversibility of the impacts. Factors impacting on the reinstatement/restoration timescale could well move into a more "long term" timescale which will impact the conclusions of the LSVIA in terms of significance. HDD or similar should be used to avoid impacts where hedgerows or other valuable ecological receptors are crossed to avoid severance across the landscape for the period of time that it would take for the habitat to be restored. This also fits with the avoid, mitigate, compensate hierarchy.	Assessment of impacts have been reviewed and revised in relation to mitigation measures currently available to the Proposed Development, rather than those alluded to during the PEIR stage. These are set out in **section 1.8** and **section 1.10**, **1.11** and **1.12** of this chapter.
July 2024	Natural England – Section 42 response	Natural England welcomes the approach taken to avoid or reduce impacts to protected species. For all licensing matters, applicants should consult Natural England's licensing guidance for the relevant species and decide whether a mitigation licence is required. Natural England is unable to comment on the need for a licence, this responsibility falls to the developer. We note that the developer has identified the need for a Protected Species licence for Dormice. Survey effort should be designed to provide sufficient information such that the baseline data in the ES is adequate for the purposes of assessing the impact of the proposal.	Draft licence applications for dormice and bats will be forthcoming based on a realistic worst-case scenario where there is confidence in the level of impact supporting the migration and compensation proposals. Additional survey data is being collected for dormouse in 2024 and inspections of trees with bat roost potential located where direct and indirect impacts are possible. Letters of No Impediment will be sought from Natural England through dialogue

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			and discussion. As set out in **section 1.8** of this chapter.
July 2024	Natural England – Section 42 response	Dormouse: Volume 1 appendix 3.1 draft mitigation schedule indicates a draft dormouse licence application and Method Statement will be produced for the final Environmental Statement. Given the ongoing status of ecological survey we recommend a draft licence application is submitted at the pre-application stage in advance of the formal submission of the NSIP application to the Inspectorate. This is to ensure any licencing issues are resolved prior to examination and avoid delays at the application or examination stage. Following the review of the draft licence application, Natural England will either: provide a Letter of No Impediment (LONI), explaining 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; or if there are licensing issues to address, these will be set out in writing for the applicant to resolve. Only when all matters are resolved, following review of a subsequent draft licence application, can a LONI be issued. Any LONI will be sent to the applicant to provide within the application for examination. Natural England will copy any correspondence to the Inspectorate.	A draft licence application will be submitted to Natural England in relation to dormouse, drawing on data collected in 2024, 2021/2022 and 2010/2011, in order to seek Letters of No Impediment from Natural England. As set out in **section 1.8** of this chapter.
July 2024	Natural England – Section 42 response	Pre-construction surveys: Where further post-consent surveys (for example in the circumstance of bats and otters, where further survey is only proposed pre-construction, not to inform the ES) reveal the need for a licence from Natural England, we advise this will need to be applied for in the usual manner. Natural England is 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).	As set out in **sections 1.7** and **1.8** of this chapter, pre-construction surveys for mobile species will be undertaken.
July 2024	Natural England – Section 42 response	Bats: Natural England notes that Volume 1 appendix 3.2 section 1.8.21 identifies a single tree with a roost used by small numbers of soprano pipistrelles adjacent to the HDD work site situated to the southwest of the Torridge Estuary. This is of concern to Natural England.	Inspections of all trees with bat roost potential located where direct and indirect impacts are possible are ongoing. Use of trees will change over time and between years. The transitional roost referenced was recorded in 2010/2011. The current roost status of trees is subject to monitoring and will continue prior to commencement to inform the detailed licensing

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			submission, mitigation and compensation. Wherever possible, avoidance and stand offs will be incorporated into the detailed design. See information in **section 1.8** and **1.10** of this chapter.
July 2024	Natural England – Section 42 response	Lighting in the vicinity of a bat roost could constitute an offence since it can cause disturbance and potential abandonment of the roost. It can also prevent bats from emerging which may lead to entombment and death. Further consideration of this is required in the Application and we advise using our PSS Service.	Construction lighting controls will be implemented through the final On-CEMP(s). An Outline On-CEMP has been provided as part of the DCO application (document reference 7.7). Protection of retained roosts includes lighting design and maintenance of the dark context of roosts. Mitigation for areas in vicinity of bat roosts are set out in **section 1.8** of this chapter and will be detailed in the On-CEMP (and where appropriate, in draft licence applications).
July 2024	Natural England – Section 42 response	Whilst Natural England welcomes that surveys have been undertaken from February through to November inclusive. We are noting that bat species including the rare Greater Horseshoe Bat are becoming more active in winter due to the warmer winters. Therefore, we advise that further surveys should be undertaken in December 2024 and January 2025 to understand bat usage and ensure mitigation measures are fit for purpose. All surveys will need to cover foraging and not just flightlines.	Noted. As set out in **section 1.7** of this chapter, additional bat surveys are proposed for 2024/2025.
July 2024	Natural England – Section 42 response	Breeding birds: For breeding bird species that may be found along the cable route, such as kingfisher, barn owl, Natural England has standing advice Protected species and development: advice for local planning authorities - GOV.UK (www.gov.uk) Erection of screening and beginning works before nests are built would help reduce any impact	Details of screening, buffers and lighting measures are included in **section 1.8** of this chapter and are incorporated in the Outline On-CEMP (document reference 7.7).
July 2024	Natural England – Section 42 response	Natural England notes that (Volume 2 Chapter 1 ecology Table 1.4) complete access to all areas of the Proposed Development for detailed survey has not been possible at this point, so it has not yet been possible to definitively address ancient woodland or veteran trees. Work so far indicates none will be affected, but this will be finalised and included within the ES, along with any	Revised ancient woodland maps have been considered in the desk study (Volume 2, Appendix 1.2) and are discussed in **section 1.7** of this chapter.

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		avoidance/mitigation measures which may become necessary, if they are identified. We draw your attention to the revised ancient woodland maps (available on www.magic.gov.uk) which indicates an area of ancient woodland within the cable corridor at Hallsannery/the River Torridge Crossing which is currently not shown on Volume 2 Figure 1.1 Study Area.	Impacts on woodland and trees is considered in **section 1.10** of this chapter. All potential impacts have been avoided. Further information is provided within Volume 4, Appendix 2.6: Tree Survey Report and Arboricultural Impact Assessment. No ancient or veteran trees would be impacted within the Onshore Infrastructure Area. Mitigation measures are detailed in **section 1.8** and includes the avoidance of impacts on semi-natural woodland through the use of HDD techniques
July 2024	Natural England – Section 42 response	We advise that the ES should include an assessment of the effects of the Proposed Development on ancient woodland and veteran trees, where significant effects are likely to occur, and explain the effort made to avoid effects on ancient woodland and veteran trees, and increased fragmentation of these habitats. Measures to fully mitigate direct and indirect effects of the Proposed Development on ancient woodland, veteran trees, or other irreplaceable habitats should be clearly described and appropriately secured	
July 2024	Natural England – Section 42 response	Natural England welcomes the commitment expressed in the Preliminary Environmental Information Report (PEIR) to 'providing at least 10% biodiversity net gain (BNG) (3.11.1 Volume 1 Chapter 3 Project Description), measured using the statutory biodiversity metric'.	The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit. Approach to biodiversity enhancement is set out in **section 1.8.** This includes habitat creation at the Converter Site, including features which increase connectivity with habitat features beyond the site. This also provides mitigation habitat for protected species such as dormice, bats and breeding birds. This approach is also present in habitat creation areas to be formed in blocks to either side of the Torridge Estuary and further hedgerow enhancements along the HVDC cable route. With specific relation to enhancements for overwintering birds, opportunities for habitat creation are currently limited within the order
July 2024	Natural England – Section 42 response	Whilst BNG for Nationally Significant Infrastructure Projects (NSIPs) is not yet mandatory, securing BNG reflects the important role NSIPs play in delivering the Government's environmental targets. Natural England is supportive of a landscape scale approach to delivering BNG and increasing the area and connectivity of Atlantic rainforests, hedgerows, scrub and species-rich grassland in the locality, as previously discussed with you under our Discretionary Advice Service. We note you have identified potential BNG 'creation' off site (Vol 2 Fig 1.3), that you are seeking to tie in with appropriate local initiatives. We look forward to receiving further detail on this.	
July 2024	Natural England – Section 42 response	Natural England recommends that consideration could be given to enhancements for overwintering birds which could feed into the delivery of Biodiversity Net Gain. This could include features suitable for wintering waders and wildfowl, such as scrapes or lagoons with island refuges close to the estuary.	

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		A biodiversity gain plan template for NSIPs is not yet available, so we would advise completion of the biodiversity gain plan, which is mandatory for major developments. Submit a biodiversity gain plan - GOV.UK (www.gov.uk). A habitat management and monitoring plan should also be provided, showing how onsite and offsite gains will be managed and monitored for a minimum term of 30 years. Creating a habitat management and monitoring plan for BNG - GOV.UK (www.gov.uk	limits and it has not been possible so far to agree suitable areas of substantial off-site land for such mitigation.
July 2024	Resident – Section 42 response	Noise, disruption to the environment and wildlife. Dust, disturbance to the area of huge numbers of HGV etc along narrow country lanes - there was a horrible crash of lorry with solar panels overturning into a house on the same route	Mitigation measures are set out in **section 1.8** of this chapter and are detailed in the Outline On-CEMP (document reference 7.7). Details of road access improvement measures are included with the Proposed Development, as set out in Volume 1, Chapter 3, Project Description.
July 2024	Resident – Section 42 response	Extreme disruption to the environment, wildlife, geology.	This chapter considers impacts on wildlife and ecology. Volume 2 Chapter 4, Geology, hydrogeology and Ground Conditions considers effects on geology.
July 2024	Resident – Section 42 response	Planting woodland, floodplain management, wildflower meadows, hedges, support village halls, wildlife and gardening education in schools	Mitigation, including habitat creation is described in **section 1.8** of this chapter and further detailed in Volume 4, Chapter 2 Landscape, Seascape and Visual Resources**.**
July 2024	Resident – Section 42 response	As this is such a beautiful area, there are always going to be pressures upon it from people moving here and from tourism. Thus every opportunity should be taken by incoming businesses such as this to commit to enhancing our local biosphere.	Habitat enhancements are discussed in **section 1.8** of this chapter.
July 2024	Resident – Section 42 response	It's beyond heartbreaking to think that landfall at Cornborough & the proposed cable route will decimate the flora & fauna. It takes ages for nature to recover from that sort of decimation. Your plans for regeneration are well intentioned in the brochure but will it really happen? Your eco survey will reveal the wealth of wildlife currently using that space, peregrine falcons, kestrels, stoats, shrews, butterflies etc. My son & grandsons enjoy wild camping near the Cornborough	Impacts of Landfall at Cornborough are considered in **section 1.10** of this chapter and in Volume 4, Chapter 2, Landscape, Seascape and Visual Resources.

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		landfall site, we have loved ones ashes scattered there, the list of my sentiments attached to the area is endless but it's doubtful anyone cares about that.	
July 2024	Resident – Section 42 response	Temporary use zone on the south at Cornborough looks like it may destroy the only remaining site in North Devon for the grass *Koeleria macrantha*. The cable route looks set to disrupt sensitive habitats on the western shore of the Torridge. It also looks like it may disrupt recreational (and commuter) access along the Tarka Trail, a heavily used route. This needs to be avoided, as access to the trail helps to prevent East-the-Water being considered even more deprived than it currently is. That recreational use also contributes significantly to the income of a range of businesses (e.g. cycle hire, cafes, B&B) elsewhere along the route. Diverting cyclists around any closure would require significant use of a very busy section of A road, with limited opportunities to overtake. The A386, near Bloody Corner is already effectively reduced to single track with passing places, so might not be entirely suitable for significant use by larger vehicles. Any improvements to roadside drainage should consider the likelihood of increased flood risk downhill.	Sensitive habitats will be protected through HDD techniques to be employed at Landfall protecting the fringe of coastal habitat, at the River Torridge estuary and adjoining woodland and at major road crossings, which serve to avoid sensitive habitats on the coastal margin and estuary and will reduce impacts on traffic congestion**.** Volume 1, Chapter 3 Project Description provides detail on trenchless crossing locations and Volume 2, Chapter 5 Traffic and Transport considers impacts associated with traffic during construction. This chapter considers impacts on habitats and wildlife in **sections 1.10**, **1.11** and **1.12.**
July 2024	Resident – Section 42 response	Think in terms of enhancing and linking up any existing wildlife corridors (meadow, woodland, hedge) when restoring the disturbed areas. Source seed locally where possible or arrange to bring in local seed (many big projects import exotic subspecies instead of their native counterparts). Devon Wildlife Trust might be a good organisation to contact	Seed of local provenance will be used, where possible for reinstatement, enhancement and habitat creation, as set out in **section 1.8** of this chapter. Further details are provided in the Outline LEMP (document reference 7.10).
July 2024	Torridge District Council – Section 42 response	The cabling work will inevitably lead to the loss of a considerable amount of hedgerows and other areas of biodiversity. While it is noted that Xlinks is proposing to deliver net gain in terms of biodiversity, this isn't going to happen instantly. Any net gain provision should be delivered at the earliest possible stage in the development. Thorough and robust ecological surveying is needed to properly understand impacts and to enable mitigation. The Council has appointed an external ecologist who will be available for upcoming ecology focused pre-application meetings.	Measures to reinstate hedgerows and enhance additional lengths of hedgerow are included in the scheme, as set out in **section 1.8** of this chapter. The Proposed Development is not subject to a mandatory net gain requirement under the Environment Act 2021. Nevertheless, the Applicant has engaged with statutory consultees to discuss the approach and inform design, allowing for the development of mitigation and enhancement to maximise biodiversity benefit.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
			Approach to biodiversity enhancement is set out in **section 1.8.** This includes habitat creation at the Converter Site, including features which increase connectivity with habitat features beyond the site. This also provides mitigation habitat for protected species such as dormice, bats and breeding birds. This approach is also present in habitat creation areas to be formed in blocks to either side of the Torridge Estuary and further hedgerow enhancements along the HVDC cable route. No contact with the Council's Ecological Consultant has been received as yet.
July 2024	Torridge District Council – Section 42 response	A comprehensive and effective landscaping scheme to deliver tree planting, hedge creation and widening would provide an opportunity for long-term environmental enhancements	Habitat creation, reinstatement and enhancement are set out in **section 1.8** of this chapter, and further details are available in the Outline LEMP (document reference 7.10).
30/09/2024	Torridge District Council, Meeting	The meeting provided an overview and updates to the Proposed Development, including refinements in Order Limits since the submission of the PEIR. It also provided detail on the surveys undertaken to date, surveys which are ongoing or planned for late-2024 and 2025, and the approach to biodiversity mitigation and enhancement.	Current design of the Proposed Development is set out in Volume 1, Chapter 3: Project Description of the ES. Information on surveys undertaken to date are provided in **section 1.6.**
21/10/2024	Natural England Dormouse and Bat Licensing Meeting	Dormouse: a draft dormouse licence application and Method Statement will need to be produced accurately defining the level of effect. Draft licence applications must demonstrate confidence in level of activity through sufficient survey and accurate assessment of impacts. Mitigation and compensation need to address fragmentation of the dormouse habitat during construction and post-construction fragmentation of dormouse habitat during the establishment period following hedgerow reconstruction and planting. Reduced survey scope and older data is potentially acceptable where confidence in impact predictions are clearly set out and justified in line with	Draft licence applications for dormice and bats will be forthcoming based on a realistic worst-case scenario where there is confidence in the level of impact supporting the migration and compensation proposals. Additional survey data is being collected for dormouse in 2024 and inspections of trees with bat roost potential located where direct and indirect impacts are possible.

Date	Consultee and type of response	Issues raised	How and where considered in the ES
		Policy 4 of the Natural England European protected species policies for licences. Detailed information on bat roosts should be included in a draft bat licence application and Method Statement supported by survey data. Mitigation needs to consider flightline connectivity as well as the roost to maintain status and avoid deterioration of immediate context and connectivity to the wider landscape. Autumn surveys of bat activity survey to be continued over assess activity of rarer bat species during the hibernation period when some species (including greater horseshoe are periodically active)	The draft licence will present a realistic worst-case impact and the proposed mitigation measures informed by additional surveys. Avoidance will be adopted through detailed design where ever possible. Bat activity surveys (remote recording will continue from October to February. Letters of No Impediment will be sought from Natural England through dialogue and discussion, as set out in **section 1.8** of this chapter.

1.4 Study Area

1.4.1 The study area used for the initial desk study search was based on the following criteria.

- Locally designated sites, including Local Nature Reserves (LNRs) and Local Wildlife Sites (LWSs), and less mobile species located within 2 km of the Onshore Infrastructure Area as part of the Proposed Development.
- Nationally designated sites, including SSSIs and National Nature Reserves (NNRs), and records of particularly mobile protected or otherwise notable species (e.g. bats and otters) located within 5 km of the Onshore Infrastructure Area as part of the Proposed Development.
- Internationally designated sites, including SAC, possible SACs (pSACs), SPAs, possible SPAs (pSPAs), and Ramsar sites, located within 12 km of the Onshore Infrastructure Area as part of the Proposed Development. However, as noted within **Table 1.4** and **Table 1.5**, potential effects on higher level terrestrial designated sites requiring HRA has been scoped out, as advised by Natural England and confirmed by the SoS.

1.4.2 The onshore ecology and nature conservation study area is shown on Volume 2, Figure 1.1.

1.4.3 The specific survey areas used for individual habitat and species surveys are appropriate to the type of survey being undertaken. In some cases they were constrained by access restrictions, but for example, surveys for evidence of otters focussed on locations where there may be specific impacts as a result of construction of the Proposed Development on habitats likely to be used by otters, rather than a wide-ranging presence-absence survey for the species, which is well-known to be present in the Taw-Torridge catchment. Other surveys, such as breeding birds covered all parts of the Onshore HVDC Cable Corridor and Converter Site available at the time of survey.

1.4.4 Habitat surveys extended to 150 m to either side of the proposed Onshore HVDC Cable Corridor as understood at the time of survey, and where access was available. Where possible, habitats in adjacent fields were noted, to provide a landscape context of the types of area being passed through. This has allowed those locations where routing deviations have occurred to remain covered by baseline survey information.

1.4.5 For species-specific surveys undertaken to date, survey areas were appropriate to the species-surveys being undertaken, as follows.

- Over-wintering and migratory birds: focussed on areas likely to be of particular benefit to these species, such as areas associated with the Landfall and surrounding coastline, and areas associated with the Torridge Estuary and surrounding areas.
- Breeding birds: focussed on the entire Onshore Infrastructure Area (where land owner access was available).
- Dormouse survey: included all hedgerows passed through by the Onshore HVDC Cable Corridor (as understood at time of survey).
- Otter survey: as otters are well known to be present in the area, survey focussed on identifying signs of otter activity on the accessible sections of

watercourses crossed by Onshore HVDC Cable Corridor and the associated terrestrial habitat. Where landowner access was granted, surveys were focussed on the crossing locations, but extended as far as possible (within existing landowner holdings) up and down-stream of the proposed crossing location.

- Badger survey: Onshore Infrastructure Area with up to 100 m buffer as extended where field signs suggest possible presence of badger setts beyond the boundary.

1.4.6 Where access was not permitted, all Public Rights of Way (PRoW) were explored in order to identify habitats present, and where appropriate, to undertake species-specific surveys.

1.4.7 Some surveys were undertaken during periods when previous iterations of the Proposed Development design were in place and as a result the study areas for these surveys reflect the design in place at the time of survey. These changes has reduced the extent of the Proposed Development minimising the extent of unsurveyed land within the final Onshore HVDC Cable Corridor. The additional land adjoins the survey areas and comprises equivalent habitats (improved pasture, grass ley, arable and hedge boundaries and will be associated the similar levels of use by protected species.

1.5 Scope of the Assessment

1.5.1 The scope of this ES has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 1.4** and **Table 1.5**. A suite of surveys was agreed in principle with Natural England and includes a Phase 1 habitat survey and a number of species-specific surveys for those species which could be expected to be present, based on information from desk study and habitats types within the Proposed Development.

1.5.2 As the design of the Proposed Development has evolved, locations for substantial components such as the Converter Site has changed and landowner access to some areas of the Proposed Development have not been available.

1.5.3 The assessment has been undertaken identifying a reasonable worst-case scenario for ecological receptors which could reasonably be expected to be present in locations affected by the Proposed Development, based on the survey findings, habitat types present, historic surveys and desk study data.

1.5.4 In this case and where there is good evidence that an ecological receptor is likely to be present, the assessment has assumed that they will be present and will require appropriate mitigation. Ecological receptors considered include statutory and locally designated sites for nature conservation, national and local priority habitats, and species including protected or otherwise notable species.

1.5.5 The reasonable "worst case scenario" assessment has taken into account that the Proposed Development presented represents an application which will be subject to further detailed development.

1.5.6 The Proposed Development refers to all the land within the Order Limits. The footprint of the temporary works for the onshore HVDC Cables will affect only part of the land designated as the Onshore HVDC Cable Corridor. The physical footprint of the temporary cable installation works will be offset from off-site

features of nature conservation value (i.e. as the Order Limits reflects the maximum possible extent).

1.5.7 The cable route and temporary haul road will directly affect a proportion of the habitats within the Onshore HVDC Cable Corridor with over 50% of the habitat within the Proposed Development to be retained and protected.

1.5.8 The assessment has been prepared with baseline data collected between 2021 and 2024 with reference to relevant survey findings in the publicly-accessible ES for the Atlantic Array Offshore Wind Farm project, where surveys of a very similar cable route from the proposed landfall to the Alverdiscott Substation Site were undertaken in 2010 and 2011. This included data for areas where access has not been available for this study.

1.5.9 Taking into account the scoping and consultation process, **Table 1.6** summarises the impacts considered as part of this assessment.

Table 1.6: Impacts considered within this assessment

Activity	Impacts scoped into the assessment
Construction Phase	
Installation of Landfall	Potential impacts on Mermaids Pool to Rowden Gut Site of Special Scientific Interest (SSSI).
	Potential impacts on wintering and migratory birds, breeding birds, reptiles, dormice, bats and other protected or otherwise notable species. Impacts from direct temporary or permanent habitat loss, severance or degradation through air or water-borne contaminants, damage to places of rest, potential injury to individuals and disturbance as a result of construction activity.
Installation of Onshore HVDC Cable Corridor (including temporary compounds)	Potential impacts on statutory designated site (such as Kynoch's Foreshore Local Nature Reserve (LNR) and locally designated County Wildlife Sites (CWS) on or close to the Onshore HVDC Cable Corridor. Impacts from indirect habitat degradation through air or water-borne contaminants, or damage, severance from or disturbance to habitats used by species for which the sites may be designated.
	Potential impacts on important habitat features such as Devon hedges, woodland and watercourses.
	Potential impacts on protected or otherwise notable species such as wintering and migratory birds, breeding birds, dormice, otters, bats, badgers, reptiles, fish and invertebrates. Impacts from direct temporary or permanent habitat loss, severance or degradation through air or water-borne contaminants, damage to places of rest, potential injury to individuals and disturbance as a result of construction activity, including noise, vibration and construction activity.
Construction of Converter Site (including road improvement measures for transport of materials	Potential impacts resulting from loss of habitat, disturbance to protected or otherwise notable species (as noted above) or damage to or loss of their habitat. Impacts from direct temporary or permanent habitat loss, severance or degradation through air or water-borne contaminants, damage to places of rest, potential injury to individuals and disturbance as a result of construction activity.
	Potential indirect impacts resulting from contamination events which may affect adjacent habitats and areas, and which could have effects on locally designated sites occurring close to the site or connected to it by possible contamination pathways (such as watercourses).

Activity	Impacts scoped into the assessment
Operation and Maintenance	
Operation and maintenance of Onshore HVDC Cable Corridor	Potential impacts on habitats and disturbance to protected or otherwise notable species resulting from regular maintenance works.
Operation and maintenance of Converter Site	Potential impacts on protected or otherwise notable species as a result of long-term disturbance from operation and regular maintenance activities at the site.
Decommissioning Phase	
Dismantling and demolition of Converter Site	Potential indirect impacts to adjacent habitats and species utilising them as a result of noise, and possible contamination issues.
	Potential effects as a result of habitats installed to replace Converter Site. Impacts from direct temporary or permanent habitat loss, severance or degradation through air or water-borne contaminants, damage to places of rest, potential injury to individuals and disturbance as a result of construction activity.
Withdrawal of cabling along Onshore HVDC Cable Corridor	Potential indirect impacts of disturbance to species utilising adjacent habitats.
Dismantling of the Landfall	Potential impacts on Mermaids Pool to Rowden Gut SSSI.
	Potential impacts on wintering and migratory birds, breeding birds, reptiles, dormice, bats and other protected or otherwise notable species (and any other Important Ecological Feature (IEF) which has occurred in the intervening period between construction and de-commissioning). Impacts from direct temporary or permanent habitat loss, severance or degradation through air or water-borne contaminants, damage to places of rest, potential injury to individuals and disturbance as a result of construction activity.
Potential dismantling of cable corridor ducting	Potential impacts on statutory designated site (such as Kynoch's Foreshore Local Nature Reserve (LNR) and locally designated County Wildlife Sites (CWS) on or close to the route alignment.
	Potential impacts on important habitat features such as Devon hedges, woodlands and watercourses.
	Potential impacts on protected or otherwise notable species such as wintering and migratory birds, breeding birds, dormice, otters, bats, badgers, reptiles, fish and invertebrates (and any other IEF which has occurred in the intervening period between construction and de-commissioning). Impacts from direct temporary or permanent habitat loss, severance or degradation through air or water-borne contaminants, damage to places of rest, potential injury to individuals and disturbance as a result of construction activity.

1.5.10 Impacts that are not likely to result in significant effects have been scoped out of the assessment. A summary of the impacts scoped out, together with justification for scoping them out and whether the approach has been agreed with key stakeholders through either scoping or consultation, is presented in **Table 1.7**.

Table 1.7: Issues scoped out of the assessment

Impact	Justification
Construction Phase	
Installation of landfall and onshore HVDC Cables	Potential effects on higher level terrestrial designated sites requiring HRA as advised by Natural England.

Impact	Justification
Potential spread or transmission of INNS	No INNS have been identified in the locations likely to be affected by the construction of the Proposed Development. Precautionary measures to prevent spread of any previously undiscovered INNS are integrated into the Outline On-CEMP (document reference 7.7) and Outline LEMP (document reference 7.10) covering maintaining up to date information of presence and mapping of their distribution and the implementation of avoidance/control/removal as part of standard working practice across all woks within the Proposed Development. Therefore, no likely significant effects would be expected in relation to the potential spread or transmission of INNS.
Operation and Maintenance	
Operation and maintenance of the Converter Site	Potential effects on higher level terrestrial designated sites requiring HRA as advised by Natural England.
	Temporary and permanent habitat loss will not occur during operation and maintenance period.
Decommissioning Phase	
Decommissioning of the Converter Site and associated cables.	Potential effects on higher level terrestrial designated sites requiring HRA as advised by Natural England.

1.6 Methodology

Relevant Guidance

1.6.1 Guidance on ecological impact assessment has been used from the Chartered Institute of Ecology and Environmental Management (CIEEM). The primary source of guidance used was.

- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Coastal and Marine v1.2 (updated 2022).

1.6.2 This approach is in line with the overarching methodology set out in Volume 1 Chapter 5: EIA Methodology of the ES. Furthermore, guidance on ecological survey methods, species and their mitigation has been sought from the following sources:

- Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists Good Practice Guidelines;
- Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists Good Practice Guidelines;
- CIEEM (2023) UK Bat Mitigation Guidelines;
- Devon Great Crested Newt consultation Zones (Devon Biodiversity Records Centre);
- English Nature (2006) Dormouse Conservation Handbook;
- Natural England (2008) Devon field boundaries: restoration standards for agri-environment schemes Natural England Technical Information Note 039;
- Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). Bird Census Techniques: 2nd edition. Academic Press, London;
- Joint Nature Conservation Committee (JNCC, 1998) The Herpetofauna Workers' Manual; and

- JNCC (2003) Handbook for Phase 1 habitat survey.

Methodology for Baseline Studies

Desk Studies

1.6.3 An initial desk study was carried out in November 2022, where ecological data was requested from the Devon Biodiversity Records Centre (DBRC). An update to this desk study was undertaken in 2024, which sought to update the previous information received from DBRC and also to seek additional data from other interested parties which may hold information. In addition to these, the desk study utilised online sources of information such as the Defra MAGIC interactive website, the Devon Local Habitat Map (Devon County Council Environment Viewer), and the Defra/Environment Agency's River Catchment Data Explorer. Further information is provided in Volume 2, Appendix 1.2: Ecological Desk Study of this chapter.

Site-Specific Surveys

1.6.4 As discussed with Natural England, the following site-specific surveys have been undertaken so far.

- **Phase 1 Habitat survey**. Using methods set out in JNCC (2003) Handbook for Phase 1 habitat survey. Due to access limitations, habitat assessment of land to the west of Abbotsham and the Converter Site or Alverdiscott Substation Site was assessed from aerial photographs and PRoW. All these habitats were subject to a ground truthing walkover survey in October 2024.
- **Initial desk-study**. Initial desk study data for 2 km radius around Onshore Infrastructure Area as part of the Proposed Development (local designated sites and non-mobile species) and 10 km for mobile species and statutory designated sites). Obtained from DBRC and via MAGIC maps. The initial desk study has been updated and includes details of responses from all interested parties contacted for information.
- **Dormouse Survey**. Surveys of hedgerows crossed by Onshore HVDC Cable Corridor (where access available) using nest-tube methods from English Nature (2006) Dormouse Conservation Handbook. Access restrictions have prevented surveys to areas west of Abbotsham, the Converter Site and Alverdiscott Substation Site. Surveys of these additional areas are being completed in autumn 2024 and the findings will support the draft EPS licence application for this species.
- **Otter/Water Vole survey**. Rather than search for presence/absence signs for otters, which are well known to occur in the area, the surveys focussed on watercourses crossed by Onshore HVDC Cable Corridor, looking for evidence of recent use by otters or water-voles, and particularly focussing on potential places of rest for otters. Due to access limitations, no otter/water vole survey has been undertaken at the Landfall, along the Kenwith Stream or on the small watercourse channels bounding the Alverdiscott Substation Site.
- **Bat activity survey** (Compound locations). Combination of visual transects and static detector deployments as set out in Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists Good Practice Guidelines (with the

initial survey work completed prior to the publication of fourth edition of this guidance in September 2023).

- **Bat roost potential survey**. Inspection of trees along accessible parts of Onshore Infrastructure Area for potential bat roosting features as set out in Bat Conservation Trust (2016) Bat Surveys for Professional Ecologists Good Practice Guidelines (with the survey work completed prior to the publication of fourth edition of this guidance in September 2023).
- **Badger survey**. Survey of all accessible parts of the Onshore Infrastructure Area to at least 100 m either side of route alignment. Followed methods set out in Animal and Plant Health Agency (APHA) (2021) Supporting Skills for Badger Vaccination – Section 5 Surveying. Due to access limitations, the land west of Abbotsham or the Converter Site or Alverdiscott Substation Site could not be included in the surveys.
- **Breeding bird survey**. Following methods set out in Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). Bird Census Techniques: 2nd edition. Academic Press, London. Due to access limitations, no direct survey has been undertaken at the Landfall, Converter Site or Alverdiscott Substation Site. However, breeding bird survey was carried out from PRoW the results of which provide a reasonable understanding of breeding birds for this assessment.
- **Wintering/migratory bird survey**. Following methods set out in Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S.H. (2000). Bird Census Techniques: 2nd edition. Academic Press, London. As with other surveys, due to access limitations, no survey has been undertaken on the land west of Abbotsham or the Converter Site or Alverdiscott Substation Site as yet. Surveys in these areas have been undertaken from PRoW only at this stage.
- **Reptile survey**. Following methods set out in JNCC (1998) The Herpetofauna Workers' Manual. Selected areas of higher value habitat were surveyed within a landscape dominated by sub-optimal habitat (grass leys, arable crops and closely grazed improved pasture). Reptile surveys carried out at the Landfall and Alverdiscott Substation Site in autumn 2024 are included in the baseline information.
- **Aquatic Invertebrate survey**. Following methods set out in Environment Agency internal document No. 018_08 (2017).
- **River Condition Assessment survey**. Following methods set out in Gurnell, A., England, J., Shuker, L. and Wharton, G. 2020a. *The MoRPh Survey, Technical Reference Manual* www.modularriversurvey.org/.

1.6.5 The baseline for this assessment draws together the survey data obtained between 2021 and 2024, historic data from the Atlantic Array assessments and desk study records. The assessment is based on the results of completed 2021 to 2024, desk study data and information from previous historical surveys, primarily the Atlantic Array project (not implemented), which followed a similar cable route.

1.6.6 Due to landowner access restrictions, it has not been possible to undertake a complete survey of all areas within the Order Limits with permission for access to land west of Abbotsham and Alverdiscott Substation Site provided in late summer 2024. Access to the Converter Site is still being progressed. In areas where access has not been permitted, presence of species is assumed where

suitable habitats occur; identified during walkovers or potentially present based on aerial photography.

1.6.7 Surveys for protected species in these areas (bats and dormice) are subject to methods set out in **section 1.5** above and require prolonged survey effort and will be reported in 2025.

1.6.8 The assessment of effects on winter and breeding bird is based on the 2021/2022 survey findings which is considered very likely to accurately reflect the assemblage of species using the site in winter and summer. Update wintering bird and breeding bird surveys are being repeated in 2024/2025 and will be reported in 2025.

1.6.9 Bat activity transects and remote recording are being undertaken on the land west of Abbotsham or the Converter Site or Alverdiscott Substation Site in autumn 2025, winter 2024/2025 and spring 2025. Remote recording will also be undertaken in selected locations along the Onshore HVDC Cable Corridor during winter 2024/2025. Surveys will follow the Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists Good Practice Guidelines.

1.6.10 Climbing inspections of selected trees will continue in 2024 and 2025 to review presence/absence of roosts and define their status. Surveys will follow methods set out in Bat Conservation Trust (2023) Bat Surveys for Professional Ecologists Good Practice Guidelines.

1.6.11 The baseline species status used in the assessment is considered precautionary and intended to over-estimate the distribution and populations of species to inform a "worst case scenario" assessment of effects. The 2024/2025 surveys covering areas have previously not been accessible will either confirm presence (which is assumed in this assessment) or conclude likely absence where the potential impact presented in this chapter would not occur.

1.6.12 The effects on species has been assessed against the reasonable 'maximum design scenario' taking into account the permanent development footprint (converter stations and highway improvements), all temporary construction compounds and works areas, the installation of the onshore HVDC and HVAC Cables and the associated temporary haul road.

1.6.13 As a consequence, this presents a precautionary approach to species impacts and the most significant level of impact envisioned for each receptor.

1.6.14 It is recognised that a European Protected Species licence will be required for hazel dormouse. A draft dormouse EPS licence will be prepared drawing upon survey data obtained in 2010, 2021/2022, and 2023. Areas not accessible for survey between 2021 and 2023 have been subject to survey in late 2024 and the additional results will be incorporated into the licence application. The survey data will allow potential impacts to be confidently predicted in advance of the detailed design and inform the mitigation measures that will underpin the licence application and be incorporated into the final On-CEMP(s).

1.6.15 Under a precautionary approach, it is assumed that an EPS licence will be required for the loss of at least one tree bat roost. The need for a bat licence is being informed by ongoing surveys being undertaken in 2024 and 2025. Avoidance to be adopted wherever feasible but the presence of bat roosts in trees within the Order Limits has been assumed in this assessment. All trees with bat roost potential that could be adversely affected will be subject to climbing surveys in autumn 2024. A precautionary draft licence and method

statement will be prepared in relation to the loss of bat roosts and indirect effects on associated flightpaths.

1.6.16 The draft licence applications and method statements will be issued to Natural England for their assurance that any such licences would be approved and 'Letters of No Impediment' (LONI) can be issued from licensing authorities (Natural England).

1.6.17 For other legally protected species (including badger and European otter) there is no envisaged requirement for licensing to be required for the Proposed Development.

Impact Assessment Methodology

Overview

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

1.6.19 The approach to determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor. This section describes the criteria applied in this chapter to assign values to the magnitude of impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on relevant guidance, including the Design Manual for Roads and Bridges (DMRB) methodology (Highways England et al., 2020) where appropriate as described in further detail in Volume 1, Chapter 5: EIA methodology of the ES.

Receptor Sensitivity/Value

1.6.20 The criteria for defining sensitivity of Valued Ecological Receptors in this chapter are outlined in **Table 1.8**.

Table 1.8: Sensitivity criteria

Sensitivity	Definition
Very High	Very high importance and rarity, international scale and very limited potential for substitution.
High	High importance and rarity, national scale and limited potential for substitution
Medium	High or medium importance and rarity, regional/county scale, limited potential for substitution
Low	Low or medium importance and rarity, district scale
Negligible	Very low importance and rarity, local scale

Magnitude of Impact

1.6.21 The criteria for defining magnitude in this chapter are outlined in **Table 1.9**.

Table 1.9: Impact magnitude criteria

Magnitude of impact		Definition
High	Adverse	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements
	Beneficial	Large scale or major improvement or resource quality; extensive restoration or enhancement; major improvement of attribute quality
Medium	Adverse	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements
	Beneficial	Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality
Low	Adverse	Some measurable change in attributes, quality or vulnerability, minor loss or, or alteration to, one (maybe more) key characteristics, features or elements
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements
	Beneficial	Very minor benefit to, or positive addition of one or more characteristics, features or elements
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Duration of Impact

1.6.22 In general duration of impacts are described as below:

- short term: a period of months, up to one year;
- medium term: a period of more than one year, up to five years; or
- long term: a period of greater than five years.

1.6.23 However, these will be qualified as necessary when considering specific impacts on particular receptors. For example, a period of one year or less may be considered short-term in human perception, but a construction activity of this period may have effects on a short-lived species by affecting breeding success in a single year, thereby affecting species viability in coming years.

1.6.24 Similarly, a medium term duration of up to five years may actually represent several generations of some species or groups, and in terms of effects on that group, this may result in a long-term effect.

1.6.25 Where necessary, explanation of these considerations will be included where duration of effects are discussed.

Significance of Effect

1.6.26 The significance of the effect upon onshore ecology and nature conservation has been determined by taking into account the sensitivity of the receptor and the magnitude of the impact. The method employed for this assessment is presented in **Table 1.10**. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement.

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

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

Table 1.10: Assessment Matrix

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

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

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

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

Assumptions and Limitations of the Assessment

1.6.31 Surveys of all areas to be covered by the Onshore Infrastructure Area as part of the Proposed Development have not as yet been possible, due to lack of land owner access to some parts, most notably surrounding the Converter Site and Alverdiscott Substation Site as well as at the Landfall and some parts of the Onshore HVDC Cable Corridor around Abbotsham. It has been possible to carry out a considerable amount of work from nearby locations on PRoW, such

as along the coastal footpath and linking footpaths, which provide clear views of the Landfall and have provided appropriate levels of information to be able to identify baseline levels for habitats present, and also provide sufficient information on species groups such as wintering and migratory birds, breeding birds and bat activity levels.

1.6.32 For other species groups, sensible assumptions about presence have been made in unsurveyed locations where there is suitable habitat assessment and/or historical records. In particular, there is potential for dormice to utilise any of the hedgerows within the Onshore Infrastructure Area, with each field boundary being part of a connected and many having linkage with areas of woodland. Consequently it is assumed that any of the hedgerows within the Onshore Infrastructure Area could be associated with dormice activity.

1.6.33 A similar approach has been taken in relation to bat activity within the Onshore Infrastructure Area which draws upon recording at a series of primarily wooded locations and equivalent levels of diversity and activity are assumed to across the site as a whole to ensures that the assessment considers a realistic worst case scenario.

1.6.34 Mitigation measures for species groups are based on an assumption of likely presence, where there is suitable habitat for that group is identified. Realistic "worst case scenarios" (based on assumptions set out in **section 1.5** above) have been used to provide a robust assessment of the impacts of the Proposed Development.

1.6.35 The boundary of the Proposed Development has been subject to some revision since the 2021 and 2022 surveys were undertaken. In most cases, these are minor and do not change the understanding of the baseline; relating to small realignments of the boundary and the inclusion of additional HDD compounds on the alignment of the Onshore HVDC Cable Corridor.

1.6.36 The most substantial change was the relocation of the Converter Site to an area adjoining the existing Alverdiscott Substation, and incorporating part of a solar farm that was a construction site in 2024. The routing of the Onshore HVDC Cable Corridor to the west of the A39 at Abbotsham has also be subject to revision. In both of these areas, access permission was not provided by landowners for the surveys being completed in advance of the EIA.

1.6.37 Surveys being undertaken from autumn 2024 to summer 2025, to inform detailed design and/or provide updates to previously completed surveys, incorporate the additional land parcels in the survey areas where relevant to the species group. The habitats within the additional areas of land primarily comprise arable crop, grass ley and improved pasture and equivalent to the adjacent land covered by the surveys and the precautionary assessment presented in this chapter takes into account the localised access restrictions.

1.7 Baseline Environment

Desk Study

1.7.1 Information on onshore ecology and nature conservation within the study area was collected through a detailed review of existing studies and datasets. These are summarised in **Table 1.11**.

Table 1.11: Summary of desk study sources used

Title	Source	Year	Author
Desk study material	DBRC	2022	DBRC
Internet search	MAGIC Interactive mapping	2023	Department of Agriculture, Fisheries and Food (DEFRA)

Designated Sites

1.7.2 All designated sites within the study area and qualifying interest features that could be affected by the construction, operation and maintenance, and decommissioning phases of the Proposed Development are set out in **Table 1.12** and shown on Volume 2, Figure 1.2a of the ES. Non-designated sites within the study area are presented on Volume 2, Figure 1.2b. Marine designations such as Marine Conservation Zones have not been included in this list, as they are addressed within Volume 3, Chapter 8: Physical processes of the ES.

Table 1.12: Designated sites and relevant qualifying interests

Designated Site	Distance to the Proposed Development (nearest point) (km)	Relevant Qualifying Interest
Statutory Designations		
Mermaid's Pool to Rowden Gut SSSI	Within Order Limits (Proposed Development passes underground via trenchless techniques).	Geological SSSI – Complete sequence through the Bideford Formation.
Kynoch's Foreshore LNR	Within Order Limits at Torridge Estuary (Proposed Development passes under the estuary via trenchless techniques).	The LNR includes the largest saltmarsh in Torridge District and one of the most significant areas of saltmarsh in the whole Taw Torridge Estuary complex.
Westward Ho! Cliffs SSSI	1.19	Coastal geomorphology and Quaternary deposits.
Taw Torridge Estuary SSSI	1.25	Estuary complex with mudflats, beaches, and saltmarsh with bird interest.
Kenwith Valley LNR	1.96	Woodland and scrub with wetland birds and invertebrates.
Northam Burrows SSSI	1.96	Coastal habitats with plant and bird interest.
Hobby to Peppercombe SSSI	3.4	This 6 km section of the North Devon coast supports extensive sessile oak *Quercus petraea* woodlands which contain nationally important communities of Atlantic climate old-woodland lichens.
Tintagel-Marsland-Clovelly Coast Special Area of Conservation (SAC)	3.4	Vegetated sea cliffs with unusual sessile oak woodland and dry heaths.
Braunton Burrows SAC	4.9	One of the largest dune systems in Britain, about 5 km long and 1.5 km wide, with lime-rich dunes up to 30 m

Designated Site	Distance to the Proposed Development (nearest point) (km)	Relevant Qualifying Interest
		high, and an extensive system of variably-flooded slacks, grassland and scrub, inland of a wide sandy foreshore.
Braunton Burrows SSSI	4.9	A key site for coastal geomorphology and its assemblage of nationally rare species.
Non-Statutory Designations		
Haddacott Moor CWS	0	Culm grassland and semi-improved grassland (former Culm grassland).
Lodge Plantation Unconfirmed Wildlife Site (UWS)	0	Old plantation - open canopy dry/rough grassland.
Torridge Estuary CWS	0	Estuary and saltmarsh habitats.
Abbotsham Cliff CWS	Adjacent to Order Limits	Mosaic of unimproved neutral and acidic grassland, coastal grassland, wet flushes and scrub.
Hallsannery CWS	0.003	Parkland with good numbers of veteran trees.
Ashridge Field UWS	0.06	Dry/rough grassland/scrub and possible wet woodland.
Shepheard's Meadow UWS	0.11	Dry grassland.
Gammaton Reservoir CWS	0.12	Open water, unimproved neutral grassland, culm grassland, semi-improved grassland, fen and scrub.
Lendon UWS	0.12	Bracken and scrub.
Jennetts Reservoir UWS	0.13	Open water and fen/swamp habitats.
Littlecroft UWS	0.15	Dry/rough grassland/scrub.
Bowood Farm UWS	0.20	Dry grassland/scrub/SNBW.
Upcott Wood (E) pCWS	0.22	Semi-natural ancient woodland and secondary broadleaved woodland.
Pixey Copse pCWS	0.23	Semi-natural ancient woodland.
Tennacott Wood CWS	0.23	Ancient semi-natural broadleaved woodland.
Kenwith Barton UWS	0.24	Open water.
Upcott Wood (W) CWS	0.25	Ancient and secondary semi-natural broadleaved woodland.
Upcott Wood ASNW	0.27	Ancient & Semi-Natural Woodland.
Cornborough Cliff CWS	0.29	Maritime grassland and heath, unimproved acid grassland, semi-improved grassland, scrub and bracken.
Nuttaberry UWS	0.29	Dry grassland/scrub/rough grassland/bracken.
Pixey Copse ASNW	0.30	Ancient & Semi-Natural Woodland.
Beara (W) UWS	0.34	Rough grassland/dry grassland/scrub.
River Yeo Marsh UWS	0.37	Potential saltmarsh.

Designated Site	Distance to the Proposed Development (nearest point) (km)	Relevant Qualifying Interest
Kenwith Valley UWS	0.43	Open water/dry grassland/marshy grassland/scrub.
Grenville College UWS	0.50	Parkland with possible veteran trees, planted woodland and gardens.
Heale Wood ASNW	0.50	Ancient & Semi-Natural Woodland.
Alverdiscott Field OSWI	0.51	Semi-improved neutral grassland.
Port Farm UWS	0.55	Rough grassland.
Pollyfield UWS	0.56	Rough grassland/scrub.
Yeo Vale CWS	0.56	Parkland with good numbers of veteran and ancient trees.
Cockington Plantation UWS	0.60	Broadleaved woodland.
Gammaton Road UWS	0.60	Rough grassland.
Godborough Castle and Turner's Wood CWS	0.71	Mosaic of unimproved calcareous grassland, semi-improved grassland & broadleaved semi-natural woodland.
Ford House Wood CWS	0.75	Ancient semi-natural broadleaved woodland.
Ford House Wood ASNW	0.75	Ancient & Semi-Natural Woodland.
Badgers Hill OSWI	0.77	Secondary broadleaved woodland, semi-improved neutral grassland, damp grassland and scattered scrub.
Pillmouth Wood ASNW	0.79	Ancient & Semi-Natural Woodland.
Pillmouth Wood CWS	0.81	Ancient semi-natural broadleaved woodland.
Souther Down UWS	0.81	Dry grassland/scrub.
Nethercleave Wood ASNW	0.88	Ancient & Semi-Natural Woodland.
Greenacres UWS	0.89	Brackish grazing marsh with ditches/Rough grassland.
Ley Wood CWS	0.91	Wet and dry ancient semi-natural broadleaved woodland.
Yeo Vale Wood ASNW	0.91	Ancient & Semi-Natural Woodland.
Stone Wood UWS	0.95	Ancient woodland.
Easter Down Wood UWS	0.96	Broadleaved woodland.
Osbourne Lane UWS	0.98	Rough grassland/dry grassland/scrub/SNBW.
Halfpenny Marsh CWS	0.99	Saltmarsh, coastal fen, reedbed, broadleaved woodland, disused canal and limekilns.
Down Plantation UWS	1.00	Broadleaved woodland.

Designated Site	Distance to the Proposed Development (nearest point) (km)	Relevant Qualifying Interest
Eastridge Farm UWS	1.02	Scrub/dry grassland/SNBW.
Great Huxhill UWS	1.06	Dry grassland/scrub.
Stony Cross UWS	1.06	Mire/scrub/tall herbs/rough grassland.
Edge Mill Wood ASNW	1.11	Ancient & Semi-Natural Woodland.
Pillhead Valley UWS	1.20	Rushy pasture/grazing marsh.
Ley Wood pCWS	1.24	Semi-natural ancient woodland.
Lower Guscott UWS	1.24	Dry grassland (and marshy grassland).
Ashridge (W) UWS	1.27	Wet unimproved and semi-improved neutral grassland.
Road Wood UWS	1.27	Ancient semi-natural woodland and broadleaved wood.
Bartridge (N) OSWI	1.28	Wet and dry unimproved neutral grassland partly planted with conifers.
Weare Giffard Marsh UWS	1.28	Possible floodplain grazing marsh.
Blackdown Wood UWS	1.31	Broadleaved woodland.
Weach Barton UWS	1.39	Broadleaved woodland.
Smaye's Moor UWS	1.41	Rough/dry grassland.
Salterns UWS	1.43	Rough grassland/bracken/scrub/SNBW.
Venton UWS	1.47	Rough grassland.
Cockington Cliff UWS	1.51	Coastal grassland, bracken, scrub and heath.
Annery UWS	1.60	Parkland.
Raleigh Hill UWS	1.60	Dry/rough/marshy grassland.
Kenwith Valley Nature Reserve CWS	1.61	Open water, semi-improved grassland, planted broadleaved woodland, reedbed, marshy grassland and scrub. Bird and dragonfly interest.
Cockington Cliff CWS	1.62	Maritime grassland and heath, scrub and bracken.
Southcott Field UWS	1.65	Semi-improved neutral grassland.
Poolsteps UWS	1.66	Rough grassland/dry grassland/scrub/Semi-natural broadleaved woodland.
Pillhead Bridge UWS	1.68	Unimproved acid grass and marshy grass.
Rollstone and Dymsdale Woods CWS	1.68	Wet and dry ancient semi-natural broadleaved woodland.
Rollstone Wood ASNW	1.68	Ancient & Semi-Natural Woodland.
Hillcleave UWS	1.71	Dry grassland/scrub.

Designated Site	Distance to the Proposed Development (nearest point) (km)	Relevant Qualifying Interest
Garnacott Wood ASNW	1.74	Ancient & Semi-Natural Woodland.
Westcott Cliff UWS	1.76	Coastal grassland and scrub.
Halsbury Wood ASNW	1.83	Ancient & Semi-Natural Woodland.
Huntshaw Wood PAWS	1.83	Ancient Replanted Woodland.
Halsbury Wood UWS	1.84	Semi-natural ancient woodland.
Southcott Mill UWS	1.84	Rushy pasture/dry grassland/scrub/SNBW.
Halsbury Mill OSWI	1.85	Damp semi-improved neutral grassland, rush-pasture and tall herb fen, with some recent broadleaved planting.
Gresham Court UWS	1.87	Dry grassland/scrub and broadleaved woodland.
The Rookery ASNW	1.88	Ancient & Semi-Natural Woodland.
Sandmeadow Copse UWS	1.93	Broadleaved woodland.
Thorne Wood and Ridd Copse UWS	1.95	Semi-natural ancient woodland.
Thorne Wood/Bidd Copse PAWS	1.96	Ancient Replanted Woodland.
Southcott Barton UWS	1.97	Rushy pasture.
Southcott Barton UWS	1.97	Dry grassland/scrub.
Higher Rowden CWS	1.99	Maritime grassland and heath, scrub and bracken.

Habitats – Onshore HVDC Cable Corridor

1.7.3 The proposed Onshore HVDC Cable Corridor passes predominantly through agricultural land, mainly cattle/sheep grazing areas on improved grassland or agricultural crops. There are also areas classified as poor semi-improved grassland and semi-improved neutral grassland and various types of woodland. The habitats with high sensitivity within the Onshore HVDC Cable Corridor are a section of the Torridge Estuary (and the associated intertidal mud/sand and saltmarsh), small number of blocks of semi-natural broadleaved woodland, plantation woodland, small watercourses and scrub.

1.7.4 HDD or other trenchless techniques are to be used to install the HVDC Cables beneath these habitats with high sensitivity. Details of the proposed methodologies are set out in Volume 1, Chapter 3: Project Description of the ES. The use of trenchless techniques will enable the Onshore HVDC Corridor to pass under the important habitats and features at an appropriate depth to ensure no impact.

1.7.5 The HDD compounds associated with the insertion of cable ducts using the trenchless method will be sited in locations which do not fall within any designated sites, and where they do not affect important habitats. As such, the compound locations would not have direct impacts upon the habitats or features. Volume 1, Chapter 3: Project Description of the ES provides details of trenchless (HDD) methods and locations of construction compounds associated with this methodology.

1.7.6 With the installation of a trenchless crossing and minimum depths of drilling, no impacts are anticipated on any these habitats, and they are not considered further in the assessment.

1.7.7 The habitats to be assessed along the route itself are set out below, along with the IEF value level that they have been assigned:

- broadleaved semi-natural woodland – County level IEF;
- hedges and boundaries – County level IEF;
- poor semi-improved grassland – Parish level IEF;
- improved grassland – does not have significant ecological value – IEF at the local level only;
- streams (not including the Torridge Estuary) – District level IEFs; and
- arable land – has limited ecological value – IEF at the local level only.

1.7.8 Detailed descriptions of the habitats are included in Volume 2, Appendix 1.1: Phase 1 Habitat Survey of the ES.

1.7.9 The estuarine habitat, where the Onshore HVDC Cable Corridor crosses beneath the Torridge Estuary, is of particular note. Mature saltmarshes take many years to develop and are of high ecological value, particularly to wintering and migratory waders and wildfowl. The stands of reedbed along the edge of the estuary also have value for breeding birds.

1.7.10 The watercourses that cross the Onshore Infrastructure Area provide important corridors for wildlife and are all wooded in nature. The shady, sheltered conditions of potential value for grass snake and amphibians. Common toad tadpoles were found at one site, a species which is listed on Section 41 of the Natural Environment and Rural Communities Act (NERC) 2006, is undergoing a dramatic population decline in many areas.

1.7.11 Wooded stream corridors are also important for the dispersal and foraging of various species of bats. The tributaries of the Torridge estuary have value for otter for foraging and/or migration through the landscape.

1.7.12 Aquatic invertebrate assemblages are likely to be supported in streams with clean fast flowing water. Fish species could also be present, such as eel, which is listed under Section 41 of the NERC Act 2006, or bullhead, which are protected under Annex II of the EU Habitats Directive and the Salmon and Freshwater Fisheries Act 1975. Measures to protect eels are also included in the Eels Regulations 2009 and the Salmon and Freshwater Fisheries Act 1975.

1.7.13 The arable crops, grass leys and improved pasture have potential value for ground nesting birds such as skylark. Much of the habitat present along the route will also contribute to the foraging habitat available to the local populations of common farmland bird species.

1.7.14 Less intensively managed terrestrial habitat, for example longer grassland with a southerly aspect adjoining a hedge, scrub or woodland could support reptile species such as common lizard, slow worm and possibly adder. Areas with less improved grassland may also be of some benefit to invertebrate species, as would more mature woodland areas, particularly those with dead wood present.

1.7.15 The hedges which form most field boundaries are generally species-rich and well maintained. They play an important role in providing wildlife corridors linking fragmented habitats. Hedgerows are important for species such as bats, dormice and farmland birds. Trees with cavities or very dense ivy have the potential to provide nests for breeding birds.

1.7.16 Given the predominantly species-rich nature of the hedges along with their banked construction (virtually all the hedges encountered were of typical banked 'Devon hedge' format), the hedges affected by the Proposed Development are all likely to be classed as 'Important', as defined under the Hedgerow Regulations 1997.

1.7.17 Irrespective of whether an individual hedge has been identified as 'species-rich', 'species-rich with trees' or 'species-poor', the network of hedges represents an important ecological feature through the landscape of north Devon. Additionally, potential for the presence of dormice cannot be discounted from any of the hedgerows affected by the Proposed Development, which would cause them to be considered "important" under the Hedgerows Regulations 1997. Therefore, all hedgerows have been considered as IEFs at the County level, irrespective of their species content and structure. The surveyed hedgerows are described more fully in Volume 2, Appendix 1.1: Phase 1 Habitat Survey of the ES.

River Condition

1.7.18 The river condition assessment survey was carried out at six locations (see Volume 2, Appendix 1.11: River Condition Assessment of the ES). These were sited along the Onshore HVDC Cable Corridor and the stream to the south of the Alverdiscott Substation Site. The Torridge Estuary crossing was excluded from this assessment as it is tidal and not suited to this form of survey.

1.7.19 The Onshore HVDC Cable Corridor crosses two watercourses in addition to the River Torridge. These are Kenwith Stream, and a wooded tributary feeding into Jennetts reservoir.

1.7.20 Surveys completed to date are described as follows:

- Site 1 was Kenwith Stream. This was assessed as in 'Good' condition;
- Site 3 was the stream situated within Littleham Wood. This was assessed as in 'Good' condition (note that due to design changes in the Onshore HVDC Cable Corridor, this stream is no longer crossed by the Proposed Development);
- Site 4 was the stream west of West Ashridge Farm. This was assessed as in 'Fairly Good' condition; and
- Sites 5 and 6 covered the stream to the south of the Alverdiscott Substation Site. These were assessed as in 'Fairly Good' and 'Good' condition respectively.

1.7.21 Site 2 is a minor field ditch to which access was not available at time of survey and could not be assessed. This is a lower potential value feature with the channel overshaded by scrub along its length.

1.7.22 Streams associated with the Proposed Development are assessed as IEFs at District level.

Invasive Species

1.7.23 The desk study identified the presence of INNS listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) within a radius of 2 km of the Onshore Infrastructure Area.

1.7.24 The presence of one stand of Japanese knotweed on the boundary of the Onshore Infrastructure Area and scattered plants of Montbretia within Onshore HVDC Cable Corridor is noted. Avoidance, control and/or removal will be part of the enabling works and construction working methods through maintaining maps of distribution and the implementation appropriate actions supported by an ecological clerk of works (ECoW).

1.7.25 They are not an IEF, within the impact assessment, but the prevention of spread forms part of the protection of the habitat IEFs assessed in this chapter.

Habitats – Converter Site

1.7.26 In 2022 and 2023, habitat mapping at the Converter Site has been achieved through a combination of direct observation from nearby locations with public right of access, review generally-accessible on-line aerial photography web-sites and also through a review of previous survey information undertaken for the Atlantic Array project, undertaken in 2013 and for the more recent Solar Farm project.

1.7.27 The proposed Converter Site consists of improved grassland and arable fields, with field boundaries consisting of typical Devon hedge (native species-rich hedgerow), some section of which are associated with mature trees.

1.7.28 This is bounded by further improved grassland and arable fields with semi-improved grassland beneath solar arrays in the adjacent solar farm.

1.7.29 The east of the proposed Converter Site contains the existing Alverdiscott substation, and an existing hard-standing access track passes to this facility, through the proposed Converter Site. Some boundary treatments along this track consist of post and wire fences.

1.7.30 Broadleaved plantation woodland and small areas of semi-natural broadleaved woodland occur adjacent to the Converter Site boundaries.

1.7.31 There is a small field dominated by rushes immediately to the south of the Converter Site, which is attributed to poor semi-improved grassland although this has not yet been confirmed due to lack of access.

1.7.32 The habitats to be assessed on the Converter Site are set out below, along with the IEF value level that they have been assigned:

- broadleaved semi-natural woodland and broadleaved plantation woodland (adjacent to the Converter Site) – County level IEF;
- hedges and boundaries – County level IEF;
- semi-improved grassland - Parish level IEF;
- improved grassland – does not have significant ecological value – IEF at the local level only; and

- arable land – has limited ecological value – IEF at the local level only.

1.7.33 Detailed descriptions of the habitats are included in Volume 2, Appendix 1.1: Phase 1 Habitat Survey of the ES.

Ancient Woodland and Priority Habitat Inventory Woodland

1.7.34 The desk study sources have identified a significant number of ancient woodland sites, to include Ancient and Semi-Natural Woodland and Ancient Replanted Woodland within area of search.

1.7.35 Three blocks of ancient woodland lie within 250 m of the boundary of the Proposed Development. These are:

- woodland at Hallsannery (Ancient and Semi-Natural Woodland) adjoins the Onshore HVDC Cable Corridor;
- Upcott/Jennetts Wood (Ancient and Semi-Natural Woodland) lies 155 m from the Onshore HVDC Cable Corridor; and
- Tennacott Wood (Ancient Replanted Woodland) which lies some 245 m from the Onshore HVDC Cable Corridor.

1.7.36 The footprint of the Proposed Development does not directly affect any woodland identified as ancient woodland.

1.7.37 There are a few areas of priority broadleaved woodland within the Proposed Development. These comprise:

- Lodge Plantation, north-east of the River Torridge lies adjacent to the Proposed Development (HDD compound within the Onshore HVDC Cable Corridor);
- a linear wooded watercourse between Dunn Farm and West Ashridge Farms; and
- woodland on the south western bank of the River Torridge.

1.7.38 All three woodlands lie on the alignment of Onshore HVDC Cable Corridor. The cables will be installed by HDD to avoid impacts on these habitats.

1.7.39 Other woodlands identified as deciduous woodland within the Priority Habitat Inventory located close to the Proposed Development, as follows:

- a woodland belt running south from Shamland (west of Abbotsham) lies 177 m from the Onshore HVDC Cable Corridor;
- woodland at Gipsy Lane lies 110 m (adjacent to the A39) from the Onshore HVDC Cable Corridor and HDD compound;
- woodland near High Park Farm lies 160 m from the Onshore HVDC Cable Corridor;
- Town Park Plantation separated from the Onshore HVDC Cable Corridor by an unclassified road;
- a woodland belt near Moorhead Cottage separated from the Onshore HVDC Cable Corridor by an unclassified road;
- Littleham Wood lies adjacent to the Onshore HVDC Cable Corridor;

- woodland adjoining Gammaton Reservoirs, separated from the Proposed Development by Gammaton Road (Onshore HVDC Cable Corridor); and
- small woodland blocks adjoining the Converter Site; which will be retained intact, but will lie adjacent to the Proposed Development.

Protected Species

Bats

Roosts and Roost Potential

1.7.40 The ground level assessment of the trees and structures within Onshore Infrastructure Area including the Onshore HVDC Cable Corridor recorded a total of 26 trees with moderate potential for roosting bats and 4 trees with high potential for roosting bats. See Volume 2, Appendix 1.5: Preliminary Bat Tree Roost Potential Report of the ES for details.

1.7.41 A soprano pipistrelle roost was recorded in the field tree at the location of the HDD compound located in the field to the south-west of the River Torridge during bat activity surveys of this location. The level of use recorded was limited to small numbers indicative of a non-breeding daytime transitional roost. Direct loss of the tree will be avoided through detailed design, if possible.

1.7.42 It is assumed that all trees on or situated close to the boundary of the Onshore Infrastructure Area would be retained and indirect effects avoided or minimised. However, as a worst-case, a maximum of 20 trees of moderate or high potential could be felled or located immediately adjoining a section of the working area required for the installation of the Onshore HVDC Cable.

1.7.43 Use of trees as bat roosts is being monitored over time through climbing surveys, recognising that the use of roosts, especially low status roosts, can be intermittent and infrequent.

1.7.44 Bat roosts are assessed as an IEF with up to regional level importance (low likelihood) while roost of District level importance are very likely.

Activity

1.7.45 Bat activity surveys using a combination of remote recording and transects have been completed at construction compound locations including those with connectivity to woodland and have provided information on the species assemblage using the landscape in which the Proposed Development is located and crossed by the cable route. Survey locations included wooded locations on either side of the River Torridge, West Ashridge, Town Park Plantation and Abbotsham Cross close to Gypsy Lane Wood. The proposed Gammaton Road construction compound and the Landfall were also included.

1.7.46 The bat surveys confirmed that an assemblage of the same eight species and two genera were recorded across the survey locations. This included the Annex II species; greater horseshoe, lesser horseshoe and barbastelle.

1.7.47 The survey found that the activity was generally dominated by three species; common pipistrelle, soprano pipistrelle and noctule. Pipistrelle species foraging activity was heavily localised with most of the activity associated with sheltered locations. Noctule bats were recorded across the site, and much of the activity associated with commuting through the Proposed Development but there were

occasional periods of extended foraging recorded and observed during transects typically associated with cattle-grazed semi-improved grassland.

1.7.48 The Annex II species were consistently recorded at low levels along the Onshore HVDC Cable Corridor, but with very occasional higher levels of greater horseshoe and barbastelle activity (with between 5 and 10 passes per night) were recorded at different times of year at different locations. This pattern is expected and is indicative of a dynamic use of the landscape where bat species exploit seasonal peaks in different prey species. Evidence derived from the survey areas Area do not suggest the presence of important foraging habitat for Annex II species.

1.7.49 The completed surveys have sampled activity along the Onshore HVDC Cable Corridor and at Onshore Infrastructure Areas which

1.7.50 The species assemblage recorded across the survey areas and the levels of activity found are considered to be representative of bat activity across the Proposed Development as a whole including the Converter Site, where there was no access permission to undertaken bat surveys.

1.7.51 Bats are assessed as an IEF at a regional level.

Dormice

1.7.52 Dormice surveys have recorded evidence of dormice in at different locations along the Onshore HVDC Cable Corridor. The nest tube survey in 2021/22 recorded dormice presence in six of the 50 hedgerows surveyed (See Volume 2, Appendix 1.3: Dormouse Report of the ES).

1.7.53 The results from the 2021/2022 survey confirmed the presence of dormice in few locations within or adjoining the Proposed Development:

- near Woodville Farm on Gammaton Road;
- west of Hallsannery; and
- south of the A39 approaching Abbotsham Cross (two hedgerows).

1.7.54 Dormice were also recorded in two hedgerows over 500 m south of the Alverdiscott Substation Site at a location previously in the Onshore Infrastructure Area.

1.7.55 The historic dormouse surveys in 2010/2011 also found evidence of dormice near the Converter Site; at Hallsannery, near Lower Dunn Farm in Littleham and near Gypsy Lane Wood on the Portledge Estate.

1.7.56 The results in 2021/2022 and 2010/2011 indicate that dormice use woodlands and hedgerows across the local landscape with field signs recorded to the west of the River Torridge, to the south of the Converter Site and Alverdiscott Substation Site, and in the vicinity of the A39 during both surveys.

1.7.57 Based on the habitat suitability for dormouse, the sections of hedgerow network not included in the 2021/2022, due to access restrictions, are also considered to have the potential to be used by dormouse, at least as corridors for movement.

1.7.58 The dormouse population is expected to be centred on woodland habitats and Devon hedges with a variety of mature shrubs, especially where they are connected to woodland. Devon hedges with a heavily failed shrub canopy will have lower value for foraging but will provide connectivity for individuals moving through the landscape.

1.7.59 The hazel dormouse population is assessed as an IEF at a regional level.

Otters

1.7.60 The River Torridge is known to support an otter population and territories of individuals are expected to extend along the associated watercourses within the survey area that have connection to the river.

1.7.61 Although no evidence of otter activity was found in inspected locations along the two largest tributaries located in the vicinity of the Proposed Development; the River Yeo and River Duntz, otters are expected to be active on both rivers, with individual males typically holding very extensive territories.

1.7.62 It is considered very likely that otters are using Jennetts Reservoir and Gammaton Reservoirs, both fishing lakes with direct watercourse connections. These lakes and watercourse lie outside the Onshore Infrastructure Area. Spraint was frequently recorded at a road bridge over the watercourse downstream of Jennetts Reservoir and at the River Torridge close to where this watercourse flows into the main river. The freshness of the field signs recorded indicated regular otter activity in this location.

1.7.63 No field signs, evidence of resting sites, holts or laying up locations were identified at either of the two wooded tributaries (Kenwith Stream and watercourse at West Ashridge) or the ditch channel crossed by the Onshore HVDC Cable Corridor or around watercourses adjoining or adjacent to the Onshore Infrastructure Area (at Littleham Wood and on the southern boundary of the Converter Site and Alverdiscott Substation Site).

1.7.64 The results of the otter and water vole survey are set out in Volume 2, Appendix 1.6: Otter and Water Vole Survey of the ES.

1.7.65 Otters are assessed as a IEF at a regional level.

Water Voles

1.7.66 The results of the otter and water vole survey are set out in Volume 2, Appendix 1.6: Otter and Water Vole Survey of the ES.

1.7.67 No evidence for the presence of water voles has been found. The watercourses present are not ideal for water voles due to frequent fluctuations in water level and, in some cases, inappropriate bank structures.

1.7.68 No habitats of importance to water voles occur within the Converter Site, although a small wooded ditch/watercourse adjoins the southern and eastern boundaries of the Alverdiscott Substation Site.

1.7.69 With no colonies of water vole or adjoining the Onshore Infrastructure Area, this species is not considered further in this assessment.

Badgers

1.7.70 The local area is subject to licensed culling of badgers in relation to bovine tuberculosis.

1.7.71 Details of the badger survey can be found in Volume 2, Appendix 1.7: Badger Survey of the ES.

1.7.72 No active setts (currently in use by badgers) were identified on or within 30 m of the Proposed Development including the Onshore HVDC Cable Corridor, but several disused setts were located indicating the former presence of a badger population.

1.7.73 In 2022, a few badger field signs were recorded close to Higher Huxhill *circa*. 1km south of the Converter Site and confirm the presence of at least one badger territory in the wider area.

1.7.74 There was no evidence of the active badger territories overlapping with the Proposed Development, including the Onshore HVDC Cable Corridor.

1.7.75 In areas where access permission was not granted, the absence of any field signs (paths, foraging, dung pits) along roadside hedges makes the presence of setts in woodland adjoining the site less likely.

1.7.76 Although protected under the Protection of Badgers Act 1992, badgers are generally common in Devon and are not under any conservation threat.

1.7.77 With the potential for badgers to recolonise within the Onshore Infrastructure Area prior to commencement of construction, they are assessed as a IEF at parish level.

Birds

1.7.78 The breeding, wintering and migratory birds report is found in Volume 2, Appendix 1.8: Breeding, Wintering and Migratory Birds Survey of the ES.

Wintering and Migratory Birds

1.7.79 The wintering and migratory birds survey identified 12 species of conservation importance overflying and feeding at the coastal site (adjacent to the Landfall). This included a significant number of oystercatchers, curlews, black-headed gull, turnstone and herring gull feeding on exposed seaweed during low tide.

1.7.80 At the Torridge Estuary site, the wintering and migratory birds survey recorded 13 species of conservation importance were identified feeding within the survey area during the site visits.

1.7.81 Peak counts of wader species at the Torridge Estuary site was 137 lapwing (typically under 40), 14 curlew, five oystercatcher, three redshank, and four common sandpiper. On six of the ten survey visits, less than 10 waders were present in the survey area with flocks of lapwing present in November and December.

1.7.82 For wildfowl, the peak counts were four shelduck, and 21 mallard. Black headed gull and herring gull occurred in variable numbers with peak counts of 169 and 26, respectively

1.7.83 The surveyed section of the Torridge Estuary forms a small proportion of the estuarine environment associated with the river. The species recorded foraging in the survey area were also present in the wider estuary and were seen flying over the river corridor at the survey area. No wetland and wildfowl species were observed roosting within the River Torridge survey area at high tide.

1.7.84 At the Landfall, gull, wader and waterbird species of conservation interest were recorded over the five survey visits with all the activity associated with the foreshore and intertidal mud/sand. Black headed gull was most numerous with flocks of up to 90. Curlew were generally present as a few individuals but with a

35 recorded on one survey visit. Herring gull, oystercatcher and turnstone were record in over half of the visits.

1.7.85 The survey concluded that the Landfall and immediately adjoining section of estuary have no more than local value for wintering and migratory bird populations.

1.7.86 The arable and grassland habitats around the Converter Site are not considered to be of value for wintering and migratory birds associated with the estuary.

1.7.87 Across the Proposed Development as a whole, the wintering and migratory bird activity is assessed as an IEF at the District level, due to its proximity to Taw Torridge Estuary SSSI.

Breeding Birds

1.7.88 The breeding bird survey identified a total of 24 species confirmed to be breeding, three probably breeding and four possibly breeding along the Onshore HVDC Cable Corridor. A further 39 species were assessed as non-breeding, either in the passage or using the survey area for foraging.

1.7.89 The parts of the Converter Site that were visible from PRoW were included in this survey area, although access restrictions prevented comprehensive access. The assemblage of birds recorded in this part of the site in 2021/2022 was similar to the breeding birds recorded in 2012 for the Atlantic Array scheme.

1.7.90 The survey report identified the breeding bird populations along the Onshore HVDC Cable Corridor to be no more than of local importance. Breeding birds along the Onshore HVDC Cable Corridor are, therefore, assessed as an IEF at the District level.

Amphibians

1.7.91 Less common amphibians, such as great crested newts, are quite rare in Devon. As a result, requirements to investigate the presence of great crested newts and potential impacts resulting from proposed developments within Devon are restricted to a series of Great Crested Newt Consultation Zones, which have been identified as 5 km radii around sites with known populations.

1.7.92 The Proposed Development is located outside of the Devon Consultation Zones, so Great Crested Newt surveys are not required, and this species is not considered further in this assessment.

Reptiles

1.7.93 Reptiles were recorded at six of the 14 surveyed sites illustrated in Volume 2, Appendix 1.9: Reptile Survey of the ES.

1.7.94 Two common reptile species were recorded; common lizard, and slow worm. Small populations of slow worm were recorded in the vicinity of the A39 at Abbotsham Cross roundabout, and in a field adjacent to the Kenwith Stream and Rocky Lane. A small population of common lizard was recorded in the field at the Landfall. The peak count at each location over seven survey visits was 1 adult. No juvenile reptiles were recorded but the reptile populations are treated as breeding and viable in this assessment.

1.7.95 A number of refuge sheets were disturbed by grazing cattle (particularly in 2021) during the surveys, it is possible that small reptile populations could be present at other locations within the Onshore Infrastructure Area.

1.7.96 In the agricultural landscape crossed by the Onshore HVDC Cable Corridor, areas of suitable reptile habitat are small and localised. It has been concluded that there are no Key Reptile Sites were identified along the survey route (Froglife, 1999).

1.7.97 The survey at the Converter Site in 2012 recorded likely absence but with no access to repeat this survey, the presence of a small reptile population at the Converter Site and Alverdiscott Substation Site is assumed in this assessment.

1.7.98 Reptiles are assessed as an IEF at the District level.

Fish

1.7.99 The Taw-Torridge Estuary supports a large assemblage of fish species, as set out in the desk study report (Volume 2, Appendix 1.2: Ecological Desk Study of the ES).

1.7.100 The Torridge catchment supports an important assemblage of fish species, including migratory species such as Atlantic salmon *Salmo salar*, European eel *Anguilla Anguilla*, lamprey *Petromyzontidae* and potentially Allis and twaite shad *Allosa allosa* and *A. fallax*. Both species of shad are partially protected under section 5 of the Wildlife and Countryside Act 1981 (as amended) and both are partially protected by inclusion on Schedule 4 of the Conservation of Habitats and Species Regulations 2017.

1.7.101 The Torridge catchment supports a number of other species of river fish such as brown trout *Salmo trutta,* dace *Leuciscus leuciscus*, roach *Rutilus rutilus*, perch *Perca fluviatilis*, and bullhead *Cottus gobio*. A full list of species thought to be present in the Torridge is included in the desk study report (Volume 2, Appendix 1.2: Ecological Desk Study of the ES).

1.7.102 Migratory fish frequently use smaller gravelly tributaries within the catchment as spawning grounds for breeding.

1.7.103 The fish assemblage of the Taw Torridge Estuary and the Torridge catchment are assessed as an IEF at regional level.

Invertebrates

1.7.104 Excluding the localised areas of woodland, none of the habitats within the Onshore Infrastructure Area are likely to have the potential to support important terrestrial invertebrate populations.

1.7.105 The watercourses were classified as having the potential to support an assemblage of aquatic invertebrates. Aquatic invertebrate surveys of these was undertaken in September 2022 and September 2024, covering the sections of watercourse crossed by (or located adjacent to) Onshore HVDC Cable Corridor. The survey locations are shown in Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring of Watercourses to be Crossed of the ES.

1.7.106 The invertebrate assemblages at Kenwith Stream were low in diversity and numbers. The assemblage was typical of small, stony streams with abundant *Gammarus* amphipods. No uncommon species were recorded, and the communities on this stretch of the stream were assessed as being of low conservation value.

1.7.107 The invertebrate assemblage at the watercourse west of West Ashridge Farm was found to be rather poor in diversity, with the communities dominated by

chironomid larvae, *Gammarus* amphipods and the hydrobiid snail *Potamopyrgus antipodarum*. No uncommon species were found but several sensitive taxa were present on the watercourse which had moderate conservation interest.

1.7.108 At Higher Kingdon Stream, a headwater tributary of the Huntshaw Water, originates on the eastern boundary of the Alverdiscott Substation Site. The assemblage was dominated by *Gammarus* and chironomid larvae but was the most diverse of the sampled watercourses with the presence of taxa sensitive to organic pollution. A Nationally Scarce caddisfly larvae *Hydatophylax infumatus* was recorded contributing to the conservation value of the upstream section.

1.7.109 The aquatic invertebrate diversity in Gammaton Stream was low with assemblages dominated by *Gammarus* and Chironomidae.

1.7.110 The aquatic invertebrate assemblage in the sections of watercourse within the Onshore Infrastructure Area is assessed as an IEF at the District level.

Future Baseline Conditions

1.7.111 Schedule 4, paragraph 3 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require that '*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge'* is included within the ES. This section provides an outline of the likely future baseline conditions in the absence of the Proposed Development.

1.7.112 Future baseline conditions have been considered and assessed. Influences such as climate change and current rates of decline in some species groups have been considered. It is also necessary to take into account changes which are intended as part of known and potential future planning applications.

1.7.113 In terms of known changes to habitats present, the future of habitats adjacent to the Converter Site will be modified to comply with the landscape proposals associated with the design of the Gammaton Moor Solar Farm currently under construction. This includes creation of additional hedgerows and areas of grazing and meadow grassland.

1.7.114 Given the current agrarian influence over most of the proposed Onshore HVDC Cable Corridor and Converter Site, climate change may result in changes to crops grown in arable production and potentially different varieties used for grass fodder production. As there appears to be a trend to reduce meat in the diet, fodder crop production may reduce in the long term, although it would seem unlikely to completely disappear in the north Devon area as the conditions there are well suited to stock rearing.

1.7.115 Changes in types of agrarian production are unlikely to increase the value of habitats unless accompanied by an increased emphasis on environmental benefit, either through imposition of schemes tied to farming subsidies or through an increased level of implementation of measures by individual landowners.

1.7.116 Climate change may also have effects on species assemblages in habitats such as woodland over time as species more accepting of the generally warmer temperatures and

1.7.117 Strategies to increase reliance on renewable energy may also affect the landscape along the proposed Onshore HVDC Cable Corridor and Converter Site, with more areas likely to be given over to solar arrays and possibly wind farms.

1.7.118 Many individual species groups are in decline. Groups such as invertebrates and many bird species are in decline across the country. Devon provides a stronghold for some species, such as otters, and Devon generally still has strong populations of dormice.

1.7.119 Given the recent political changes and increased emphasis on addressing the housing shortfall across the country, it is possible that some areas associated with the Proposed Development may also face increased urbanisation, particularly on the fringes of existing built up areas, such as Abbotsham, Littleham and north western Bideford. Increased housing is likely to result in further areas of habitat loss and degradation, although this effect may be defused and possibly reversed by the requirement for BNG within the planning system.

1.7.120 Over the longer term, some species will be likely to benefit from the implementation of BNG, which should provide increased areas of beneficial habitats. This will be of benefit to some if not all, groups. New BNG habitats tend to be those which are more easily created, although the metric also includes gains made by the enhancement of existing habitats and features. Those species reliant on habitats and features not easily replicated are likely to benefit least from it.

1.7.121 As it is not possible to precisely predict the extent of the above changes, it is not possible to provide a measured assessment of changes resulting from climate change, or indeed other influences which could affect the future baseline.

Key Receptors

1.7.122 Based on current understanding of the Proposed Development, the following IEFs have been taken forward into the assessment. It should be noted that current information suggests that some of these IEFs may not be significantly affected by the Proposed Development (for example, badgers for which there is no current evidence of setts in locations which could be affected by the Proposed Development). However, further surveys may identify their presence in locations not available for survey to date. They are, therefore, included in the assessment at this stage.

1.7.123 **Table 1.13** identifies the receptors taken forward into the assessment.

Table 1.13: Key receptors taken forward to assessment

Receptor	Description	Sensitivity/Value
Statutory designated sites		
Statutory designated sites within 10 km (to comply with SSSI impact risk zones as demonstrated on the DEFRA MAGIC website, provided by Natural England.	21 Statutory designated sites occur within 10 km of the Onshore Infrastructure Area. Only one (Mermaid's Pool to Rowden Gut SSSI) lies directly under the footprint of the Onshore Infrastructure Area.	High/National
Non-statutory designated sites		

Receptor	Description	Sensitivity/Value
Non-statutory designated sites within 2 km	90 locally designated sites lie within 2 km of the Onshore Infrastructure Area. The boundaries of two locally designated sites and one candidate site overlap the Proposed Development. **County Wildlife Sites:** • Abbotsham Cliff CWS (Partially within Landfall Area). • Torridge Estuary CWS (Section within cable route corridor). **Unconfirmed (Potential) Wildlife Sites:** • Lodge Plantation (Partially within cable route corridor).	Medium/County
Habitat features		
Devon hedges / hedgerows	The Proposed Development will temporarily affect approximately 87 hedgerows along the Onshore HVDC Cable Corridor with 13 hedgerows permanently affected at the Converter Site and 33 hedgerows will be permanently affected by road improvements.	Medium/County
Streams with wooded bank habitats	The Proposed Development crosses two small streams (excluding the Torridge Estuary) and two field ditches.	Medium/County
Improved grasslands, including grass leys	The Proposed Development will temporarily disturb linear corridors in areas of improved grassland (grass ley and modified grassland) and there will be permanent loss of this habitat at the Converter Site.	Negligible/Parish
Semi-improved grassland	The Proposed Development will result in temporary disturbance of semi-improved grassland at the Landfall and small areas of this habitat type along the Onshore HVDC Cable Corridor.	Negligible/Parish
Arable cropland	The temporary construction works will be disturb parts of arable fields and there will be permanent loss of this habitat at the Converter Site.	Negligible/Parish
Protected species		
Dormice	Dormice populations occur in the landscape in which the Proposed Development is located. Dormouse are assessed as having the potential to utilise any of hedgerows affected by the Proposed Development.	Medium/Regional
Otters	Otters are known to occur in the area with activity where the Proposed Development crosses the River Torridge. It is assumed that otter could use any of the watercourses within or adjacent to the Proposed Development and adjacent waterbodies.	Medium/Regional
Bats	An assemblage of at least 10 bat species has been consistently recorded at each of the survey areas located within Onshore Infrastructure Area, sited at intervals along the Onshore HVDC Cable Corridor. Populations of common and rare species will use habitats present throughout the Proposed Development as migration routes. More localised areas are associated with extended foraging activity with seasonal variation.	Medium/Regional

Receptor	Description	Sensitivity/Value
	Predicted key flight lines along the length of Onshore HVDC Cable Corridor have been defined based on the habitat and connectivity to woodland. These are illustrated on Volume 2, Figure 1.3. A number of trees with potential roost features are located within and adjoining Onshore HVDC Cable Corridor could support bat roosts. A number of trees moderate or high potential value for bats are located within the Onshore HVDC Cable Corridor. In these trees – a roost of Parish importance is likely; a roost of District importance is possible; a roost of Regional importance is unlikely.	
Badgers	No current badger activity has been recorded within the Onshore Infrastructure Area with disused setts indicating the former presence of social groups prior to the licensed cull. There is potential for badgers to re-establish territories in the Onshore Infrastructure Area in the future.	Negligible/Parish
Breeding birds	Breeding birds utilise many features affected by the Proposed Development, particularly hedgerows but may also utilise grassland and some arable cropland for nesting.	Medium/County
Wintering and migratory birds	Wintering and migratory birds occur in areas affected by the Proposed Development at lower numbers. While these IEFs are primary reasons for several local statutory designations, surveys indicate that in the vicinity of the Proposed Development, the wintering and migratory waders and wildfowl activity is associated with the estuary and intertidal habitat.	Medium/County
Reptiles	Small populations of slow-worm are present in at least two locations within the Onshore Infrastructure Area. A small population of common lizard is present at the Landfall. Wooded watercourses have potential value for grass snake.	Low/District
Other notable species		
Fish	The Taw Torridge Estuary and the Torridge catchment supports important populations of migratory and non-migratory fish. While the main river is used for migration, accessible smaller gravelly tributaries may be used for spawning.	Medium/Regional
Aquatic invertebrates	Aquatic invertebrate assemblages in streams surveyed are generally low in diversity of species and numbers.	Low/District

1.8 Mitigation Measures Adopted as Part of the Proposed Development

1.8.1 For the purposes of the EIA process, the term *'measures adopted as part of the Proposed Development'* is used to include the following types of mitigation measures (adapted from IEMA, 2016). These measures are set out in Volume 1, Appendix 3.1: Commitments Register of the ES.

- Embedded mitigation. This includes the following.

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

- Secondary (foreseeable) mitigation. IEMA describes these as '*actions that will require further activity in order to achieve the anticipated outcome'*. These include measures required to reduce the significance of environmental effects (such as lighting limits) and may be secured through environmental management plan.

1.8.2 In addition, where relevant, measures have been identified that may result in enhancement of environmental conditions. Such measures are clearly identified within Volume 1, Appendix 3.1: Commitments Register of the ES. The measures relevant to this chapter are summarised in **Table 1.14**.

1.8.3 Embedded measures that will form part of the final design (and/or are established legislative requirements/good practice) have been taken into account as part of the initial assessment presented in **section 1.10** to **1.12** below (i.e., the initial determination of impact magnitude and significance of effects assumes implementation of these measures). This ensures that the measures to which the Applicant is committed are taken into account in the assessment of effects.

1.8.4 Where an assessment identifies likely significant adverse effects, further or secondary mitigation measures may be applied. These are measures that could further prevent, reduce and, where possible, offset these effects. They are defined by IEMA as actions that will require further activity in order to achieve the anticipated outcome and may be imposed as part of the planning consent, or through inclusion in the ES (referred to as secondary mitigation measures in IEMA, 2016). For further or secondary measures both pre-mitigation and residual effects are presented.

Table 1.14: Mitigation measures adopted as part of the Proposed Development

Commitment Number	Measure Adopted	How the Measure Will be Secured
Embedded Measures		
ONS01	The site selection and route refinement process for the Proposed Development has considered the locations of statutory and non-statutory designated sites, recreational resources and special category land, which have been directly avoided, where reasonably practicable. Where this has not been possible, the	DCO Schedule 1, Authorised Development.

Commitment Number	Measure Adopted	How the Measure Will be Secured
	design of the Proposed Development includes measures to minimise impacts, such as the use of trenchless construction techniques, for example, at the Landfall and to cross the River Torridge. Where reasonably practicable, protected and unprotected areas of woodland, mature and protected trees (i.e. veteran trees), as well as other ecologically sensitive habitats have and will be avoided.	
ONS02	The following features are proposed to be crossed by HDD (or other trenchless methodologies), as set out within the Onshore Crossing Schedule: • The Mermaid's Pool to Rowden Gut SSSI, situated along the coastline at the landfall, Cornborough Range. • The following waterbodies: – Kenwith Stream, situated just south of Rickard's Down and approximately 300 m north of Abbotsham. – River Torridge, to the south of Bideford (to note, one HDD will cross both the River Torridge and A386). – A small stream, 290 m south of Jennetts reservoir and to the west of West Ashridge, which feeds into Jennetts reservoir. • The following major roads: – A39, at a section approximately 250 m south west from the Abbotsham Cross roundabout and north west from High Park Farm. – A386, to the south of Bideford (as stated above, one HDD will cross both the River Torridge and A386). • A site of suspected archaeological interest at Winscott Barton.	DCO Schedule 1, Work No. 9 and Associated Development. DCO Schedule 2, Requirement 7 (Management plans).
ONS06	A Dust Management Plan (DMP) would be incorporated within the On-CEMP(s) and measures in relation to air quality and dust management, as outlined in the Institute of Air Quality Management guidance (IAQM, 2024). A DMP assists in the appropriate management techniques to limit dust soiling from construction and decommissioning activities as far as reasonably practicable. Air quality and dust management measures, as outlined in IAQM guidance (IAQM, 2024) would be included. An Outline DMP has been provided as an appendix to the Outline On-CEMP as part of the application for development consent (document reference 7.7, Appendix C).	DCO Schedule 2, Requirement 7 (Management Plans)
ONS07	An Outline Pollution Prevention Plan (PPP) forms an appendix to the Outline On-CEMP, which has been prepared as part of the application for development consent (document reference 7.7, Appendix A). Onshore PPP(s) would be developed in accordance with the Outline PPP and would include details of emergency spill response procedures. Good practice guidance detailed in the Environment Agency's Pollution	DCO Schedule 2, Requirement 7 (Management Plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
	Prevention Guidance notes, CIRIA guidance or the latest relevant available guidance would be followed, where appropriate and reasonably practicable.	
ONS17	An Outline Landscape and Ecology Management Plan (LEMP) has been prepared as part of the application for development consent (document reference 7.10). An LEMP(s) would be developed in accordance with the Outline LEMP. It would include as far as reasonably practicable the following: • A series of pre-commencement ecological surveys, to understand conditions prior to construction. • Requirements and management measures relating to ecology and conservation. • Methodologies required for the removal, reinstatement and enhancement of hedgerows and other habitats. • Methods required to prevent disturbance to or to comply with protected species licensing • Details and role specifications for Ecological Clerks of Works, including duties, responsibilities and reporting structure. • Details regarding the use of native and locally appropriate plant species around the converter stations and in replacement hedgerows along the Onshore HVDC Cable Corridor. • Identification of areas where it may be possible to achieve advance planting. Where practical, landscape mitigation planting will be established as early as reasonably practicable in the construction phase. • Details of proposed landscape planting at the Converter Site to assist with softening and screening the buildings. • Details of management and maintenance of planting scheme.	DCO Schedule 2, Requirement 6 (Implementation and Maintenance of landscaping)
ONS37	The design of the Onshore HVDC Cable Corridor has sought to minimise the impact on mature vegetation, hedgerows and trees both through the site selection and route refinement process and narrowing the route where it crosses important hedgerows or using existing hedgerow gaps (including Devon hedge-banks). In all instances where hedgerows and Devon hedge-banks are crossed by the Onshore HVDC Cable Corridor, they would be reinstated on a 'like-for-like' basis. Where feasible and as far as reasonably practicable, existing hedge-bank materials and root-stock would be stored and re-used to form the reinstated Devon hedge-banks, including viable woody species stools. Hedgerow reinstatement would include replanting with suitable species mixes tailored to replicate and enhance the diversity of the existing hedgerows, using appropriate native species of local provenance, where reasonably practicable. A suitably experienced hedging	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
	contractor familiar with creation of Devon hedge-banks would be appointed to complete this work.	
ONS39	The design of the Proposed Development includes mitigation measures to avoid, minimise and compensate for impacts on ecology and nature conservation. The Proposed Development design has taken into account the hierarchy of mitigation actions, which as far as reasonably practicable, include the following: • the avoidance of Important Ecological Receptors (e.g. diversion of the Onshore HVDC Cable Corridor to avoid Littleham Wood); • where complete avoidance is not possible, measures have been included to minimise and mitigate impacts (e.g. reduction in construction corridor width when crossing Devon hedgerows, use of trenchless methods to minimise impacts on habitat features such as wooded streams); • compensation for unavoidable impacts (e.g. full like-for-like replacement of hedgerows impacted by corridor); and • enhancement measures (e.g. enhancement of hedgerows and additional tree planting at selected locations along the Onshore Infrastructure Area).	DCO Schedule 1, Works. DCO Schedule 2, Requirement 7 (Management plans). DCO Schedule 2, Requirement 6 (Implementation and maintenance of landscaping).
ONS41	Where reasonably practicable, the construction corridor width would be reduced where the cables, haul road and site accesses are required to cross hedgerows, which are an important resource and potentially support protected species such as dormice, bats and breeding birds. This would limit the width of hedge to be removed. Methods of clearance would be implemented to further minimise impacts on these groups, as far as reasonably practicable, such as considering timings of clearance to avoid specific impacts.	DCO Schedule 2, Requirement 7 (Management plans)
ONS42	Agricultural habitats, such as improved and semi-improved grassland and arable land, would be reinstated after construction of the Onshore HVDC Cable Corridor. Excavated topsoils and subsoils would be stored separately during construction for replacement in the correct sequence, and care would be taken with regard to levels of soil compaction. Management of topsoils and subsoils would be undertaken in accordance with the Soil Management Plan(s).	DCO Schedule 2, Requirement 7 (Management plans)
ONS43	Where possible, the cable route has avoided habitat of significant value to otters. The watercourses (Kenwith Stream, Jennett's tributary and River Torridge) identified as suitable habitat for otters have trenchless techniques proposed to cross the watercourse. Construction work sites, including trenchless installation would be located a suitable distance away from areas of habitat of high potential value to otters to minimse disturbance levels as far as reasonably practicable.	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
ONS44	An updated survey will be undertaken for all minor watercourses affected by the proposed Onshore HVDC Cable Corridor prior to the commencement of works to ensure that no new holts or other places of rest for otters have been formed prior to the commencement of construction. If a new holt or place of rest is found, an appropriate mitigation strategy would be formulated in discussion with Natural England. If construction works are unable to avoid an impact on such a holt or place of rest, a Natural England development licence for otters would be required before works can commence.	DCO Schedule 2, Requirement 7 (Management plans). DCO Schedule 2, Requirement 10 (Protected species).
ONS46	Although no active badger setts have so far been identified, activity along the Onshore HVDC Cable Corridor would be subject to continued monitoring on a quarterly basis for a full year immediately prior to commencement of construction, to review whether badgers have excavated and commenced to inhabit any new setts in locations which might be affected by the proposed Onshore HVDC Cable Corridor or converter station construction works.	DCO Schedule 2, Requirement 7 (Management plans)
ONS49	Clearance of all vegetation, identified as being of potential value to birds for nesting, would be undertaken outside of the bird nesting season, where reasonably practicable. If this is not reasonably practicable, the vegetation requiring removal would be subject to a nesting bird check by a suitably qualified Ecological Clerk of Works. If nesting birds are present, the vegetation will not be removed until the young have fledged or the nest failed. Following removal and works, habitat reinstatement would be carried out for renewed opportunities for bird nesting, once re-established.	DCO Schedule 2, Requirement 7 (Management plans)
ONS50	Measures to minimise disturbance to birds as far as reasonably practicable using particularly important features such as the Landfall and Torridge Estuary would be put in place. This would include the erection of temporary visual/sound barriers around work sites associated with the HDD on both sides of the estuary. Where works on the Onshore HVDC Cable Corridor (outside of the HDD work sites) lie within 100 m of any habitats likely to be used for wintering water birds, works should be timed to avoid the period when they are present (November to February inclusive).	DCO Schedule 2, Requirement 7 (Management plans)
ONS52	A dedicated and suitably qualified Ecological Clerk(s) of Works (ECoW(s)) for the Proposed Development would be employed to ensure that construction activities comply with the On-CEMP and LEMP.	DCO Schedule 2, Requirement 7 (Management plans)
ONS58	For hedgerows known to be used by high numbers of bats, temporary structures would be used to replicate as reasonably practicable the linear feature's canopy and left in place overnight during the construction activity. These could be formed of suitable materials such as 'Heras' fencing panels adorned with camouflage netting and stoutly anchored to the ground. The set up and use of construction phase lighting will be designed to	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
	minimise as far as reasonably practicable the impact on Cat II bats unless assessed as unsafe for site workers. Contractors would be made aware of the importance of carrying out this task, through briefing at site inductions and toolbox talks. It would not be necessary to undertake this measure during the winter period (November to February inclusive) when bats are inactive.	
ONS59	Trees with bat potential have been identified and are subject to monitoring/climbing surveys to assess if they are used by bats, and if present to confirm roost status. These surveys are being undertaken in 2024 and early 2025. These surveys will confirm as far as reasonably practicable the presence or absence of bat roosts in trees directly affected (felling) or indirectly affected by the construction works (noise, lighting, vibration). Measures to reduce disturbance to any bat roosts will be included in the detailed On-CEMP(s). The Outline On-CEMP (document reference 7.7) forms part of the DCO application and defines the measures that will be included to as far as reasonably practicable: • fencing around the HDD work site to control lighting and disturbance. • directional lighting to avoid light spillage and turning off lights overnight. • artificial bat roosting facilities would be provided in alternative trees (for each moderate to high potential value tree to be felled, three bat boxes would be installed in the vicinity to provide alternative roosting opportunities). • unavoidable loss of a bat roost would be subject to bespoke mitigation and compensation aligned to the species, and status of the roost.	DCO Schedule 2, Requirement 7 (Management plans). DCO Schedule 2, Requirement 10 (Protected Species).
ONS60	Measures to ensure that construction works are carried out in a tidy fashion, with good standards of handling sensitive materials, would prevent access as far as reasonably practicable by badgers to toxic materials. Similarly, ensuring that open excavations are left with suitable plank 'escape routes' or alternatively covered where necessary would also prevent badgers and other mammals from becoming trapped in deep excavations. These measures are set out in the Outline On-CEMP and Outline LEMP.	DCO Schedule 2, Requirement 7 (Management plans)
ONS66	Measures to protect retained vegetation and habitat features such as hedgerows, woodland and individual tree Root Protection Zones (RPZs) are be detailed within the Outline On-CEMP. Such measures would be overseen by the ECoW during construction period	Measures to be set out in Outline On-CEMP to be provided and approved as part of the DCO. DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
ONS67	HDD (or other trenchless methodology) entry and exit points will be located at least: • 8 m away from the banks of ordinary watercourses; and • 16 m from banks of the River Torridge, a tidal EA Main River, and the landward toe of associated formal and informal flood defences. The trenchless crossing depth will be determined by the depth of suitable rock as identified during supplementary ground investigation surveys. The anticipated crossing depth underneath watercourses is as follows: • 5 m for Kenwith Stream; • 9 m for the tributary of Jennetts Reservoir; and • 15 m for the River Torridge. The trenchless crossing depth for all other watercourse crossings is to be ascertained at detailed design stage and a factor of safety incorporated within engineering calculations to account for climate change impacts to peak watercourse flows and rates of incision. Where EA flood defences are present, a minimum 1.5 m vertical clearance will be maintained between the hard bed of the watercourse and the landward toe of those flood defences.	DCO Schedule 2, Requirement 7 (Management plans).
ONS94	There would be a 15 m buffer between working areas and woodland habitat where reasonably practicable along the Onshore HVDC Cable Corridor. This would include the temporary construction compounds at Hallsannery Lodge Plantation, Town Park Plantation, Kenwith Stream and West Ashridge. Woodland protection will be implemented on the boundary of the Converter Site as far as reasonably practicable. Woodland protection measures will be overseen and regularly checked by the ECoW during the construction period.	DCO Schedule 2, Requirement 7 (Management plans)
Secondary (Further) Measures		
ONS86	Construction site lighting would only operate when required and would be designed, positioned and directed to avoid unnecessary illumination of adjacent properties, sensitive ecological receptors and users of public footpaths as far as reasonably practicable. Construction site lighting will be designed in accordance with latest relevant available guidance and legislation and the details of the location, height, design and luminance of lighting to be used will be detailed within the Onshore Construction Environmental Management Plan(s) (On-CEMP(s)). The design of the construction site lighting will accord with the details provided in the Outline On-CEMP.	DCO Schedule 2, Requirement 7 (Management plans)
ONS48	To further reduce impacts from the HDD operations on nearby designated sites or other sensitive receptors, the construction work sites would be screened with appropriate fencing or screening to act as a visual and sound barrier, where reasonably practicable.	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
ONS51	Areas of high potential value to reptiles, which could be affected by construction works, would be subject to phased habitat degradation in order to encourage reptiles to evacuate the construction areas prior to the commencement of works. Immediately prior to clearance of remaining vegetation and earthworks, an update survey would be required to ensure that any present reptiles are temporarily removed to good (not degraded) habitat either side of the works. Details and methodologies are included within the Outline On-CEMP, submitted with the application for development consent.	DCO Schedule 2, Requirement 7 (Management plans)
ONS53	Management measures to control the spread of plant and animal disease will be set out in the Biosecurity Protocol, which would be developed and agreed with relevant statutory consultees prior to the commencement of construction. The Biosecurity Protocol would form part of the final On-CEMP(s) and would contain measures to address as far as reasonably practicable the following: • To prevent the spread of any INNS identified during field surveys within the Onshore Infrastructure Area. • To identify and prevent the spread of other INNS which may be identified within the Onshore Infrastructure Area during pre-construction surveys and monitoring. • To prevent the spread of notifiable animal disease, plant pests and plant pathogens.	DCO Schedule 2, Requirement 7 (Management plans)
ONS54	In relation to dormice, details and methodologies for hedgerow removal are included within the Outline On-CEMP (document reference 7.7) and under licence. These measures would be followed in instances where the creation of gaps in hedgerows are necessary. These could include: • clearance works would be carried out at times when the risk of injury to individual dormice are minimised, taking into account dormouse ecology and behaviour. This would mean that upstanding vegetation is cut and removed during the winter period when dormice are hibernating in nests at ground level, with grubbing out of roots and hedge banks undertaken from May to September, when dormice would be active and using the tree canopy. • construction areas would be carefully searched as far as reasonably practicable prior to clearance operations. If any dormice are encountered, they would be moved to suitable, safe locations beyond the working areas but within their existing range (in accordance with guidance in the Dormouse Conservation Handbook). • prior to the construction phase, habitat reinforcement, e.g., dormouse nest boxes, would be implemented beyond the areas of habitat removal. This would be applied in areas where any dormice displaced by the habitat clearance is likely to go.	DCO Schedule 2, Requirement 7 (Management plans)

Commitment Number	Measure Adopted	How the Measure Will be Secured
	• once the construction phase is completed, the reinstatement and enhancement of any dormouse habitat would be undertaken.	
ONS55	A licence under Regulation 55 of the Conservation of Habitats and Species Regulations 2017 (as amended) would be required from Natural England prior to the commencement of construction in relation to Dormice. All construction works would be carried out in accordance with the Method Statement approved by Natural England as part of the licensing process. A draft licence application and Method Statement will be produced for the final ES.	DCO Schedule 2, Requirement 10 (Protected species).
ONS56	To minimise potential disturbance to otters, temporary construction compounds within 15 m of watercourses would be screened with solid fencing on sides adjacent to the watercourse, and working lighting would be located to avoid as far as reasonably practicable light-spill onto currently unlit sections of watercourse during the construction period.	DCO Schedule 2, Requirement 7 (Management plans)
ONS57	On the basis of the survey findings, no mitigation for water voles is required. An updated survey would be undertaken prior to construction. If water voles are identified in watercourses affected by the construction works, reasonably practicable measures for their protection would be agreed upon with Natural England.	DCO Schedule 2, Requirement 7 (Management plans)
ONS62	Dormouse nest boxes would be installed in suitable existing woodland areas adjacent to the Converter Site and Alverdiscott Substation Site.	DCO Schedule 2, Requirement 6 (Implementation and maintenance of landscaping)
ONS63	A selection of bat roosting boxes would be installed in suitable locations in existing woodlands adjacent to the Converter Site and Alverdiscott Substation Site.	DCO Schedule 2, Requirement 6 (Implementation and maintenance of landscaping)
ONS47	In the event that newly-occupied setts were identified in locations where they would be damaged or disturbed by the construction works, a license would be applied for under the Protection of Badgers Act 1992. This would require an appropriate mitigation package to include sufficient details to understand if the sett to be affected a main sett, annexe, subsidiary or outlier and whether an artificial sett within the existing territory of the badger social group would be required. Methods to create this, if required, along with methods of exclusion of badgers from the sett and measures to permanently or temporarily close the sett, would be required.	DCO Schedule 2, Requirement 7 (Management plans)
Enhancement		
ONS61	The Proposed Development includes an indicative landscape strategy plan, which is provided within the Outline Landscape and Ecology Management Plan (LEMP). Habitats to be created include species-rich grasslands, shrub and scrub, woodland and woodland edge habitat intended to assist with creation of wet woodland on a landscape scale which could assist in recreating areas of wet Atlantic woodland. Additional	DCO Schedule 2, Requirement 6 (Implementation and Maintenance of landscaping).

Commitment Number	Measure Adopted	How the Measure Will be Secured
	hedgerow and scrub planting would be created to form field boundaries and provide increased connectivity into the existing hedgerow network which exists in the area.	

1.9 Key Parameters for Assessment

Maximum Design Scenario

1.9.1 The maximum design scenarios identified in **Table 1.15** have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the information provided in Volume 1, Chapter 3: Project Description of the ES.

1.9.2 Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g. different infrastructure layout), to that assessed here be taken forward in the final design. Therefore, this comprises a conservative assessment of a worst case scenario.

1.9.3 The "worst case scenario" assessment has been used as set out in parameters noted in **section 1.5** of this chapter.

Table 1.15: Maximum design scenario considered for the assessment of impacts

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
The impact of the Proposed Development on statutory designated sites	✓	✓	✓	**Construction Phase:** **Converter Site** • Earthworks to establish development platforms, screening bunds and export of surplus material. • Combined footprint of the two converter stations is 130,000 m^2, including two converter hall buildings and associated buildings and equipment. • Temporary converter site construction compound is 20,000 m^2 (additional to permanent footprint of buildings). • Duration of construction would be 72 months. **HVAC Cable Corridors (Converter Site to national grid)** • Open cut trenching: The maximum number of trenches would be four, with an approximate depth of 1.4 m. • Construction corridor width of 32.5 m per Bipole (2 Bipoles), with a length of up to 1.2 km. **Onshore HVDC Cable Corridor** • Open cut trenching: The maximum number of trenches would be two, with an approximate depth of 1.4 m. Width includes a haul road. There would be a total of 34 joint bays and 34 link boxes, with 140 m^3 and 3.15 m^3 of material excavated- for each joint bay and link box, respectively. • The working area will include a construction corridor with a width of 65 m for a length of up to 14.5 km. • Cable easement for open cut trenching will be up to 32 m, with the width of haul roads up to 7 m. • Cable installation will be completed over a period up to 36 months.	Maximum areas proposed for construction, operation and maintenance, and decommissioning. This includes the largest permanent footprint for the converter stations, which represents the largest physical impact and greatest area of habitat loss and disturbance. All major crossings, such as major roads and the River Torridge, will be undertaken using HDD or other trenchless techniques, where practicable. In terms of noise disturbance (and potential from lighting), HDD is likely to represent the MDS, particularly if 24-hour drilling is required. Disturbance may also result from construction traffic using the haul road. The maximum duration of construction is 72 months, which represents the longest overall period for construction. During operation, regular maintenance would result in disturbance from lighting and noise from road traffic.
The impact of the Proposed Development on non-statutory sites	✓	✓	✓		
The impact of the Proposed Development on protected species (Dormouse, Bats, Otters, Badgers, Breeding Birds, Migratory and Overwintering Birds, Reptiles, Invertebrates).	✓	✓	✓		

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				• The maximum number of HDD locations is six. Each HDD location will have two compounds, measuring up to 10,000 m^2. • The main construction compound at Gammaton Moor would measure up to 63,000 m^2. The duration of this compound would be 72 months, as it would also support the construction of the Converter Site. • The secondary construction compound (A39 compound) would measure up to 48,000 m^2, and have a duration of 36 months. **Landfall** • The maximum number of transition joint bays would be two. The volume of excavated material per transition joint bay would be 1,875 m^3. • HDD: The maximum number of cables will be four HVDC cables, with a maximum HDD length of 2,110 m from the offshore cable corridor to the transition joint bays. • Landfall would include a compound of 10,000 m^2. • Duration of landfall installation would be 18 months in phase 1 and 6 months in phase 2. Landfall compound would have a total duration of 36 months. • HDD will pass beneath the designated site, Mermaid's Pool to Rowden Gut SSSI. **Highway Improvements** • Widening of Gammaton Road to create two lane carriageway *circa*. 500m. • Selective widening of Gammaton Road *circa*. 2km at intervals to create passing places. • Widening of unnamed road between Gammaton Cross and Converter Site including a short section of new road to connect Gammaton Road and the unnamed road *circa*. 3km.	

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				• Creation or improvement of accesses to Onshore HVDC Cable Corridor construction sites including: – Cornborough Sewage Treatment Works access road: expanded junction and widened access track. – A39 West: creation of compound access off the unnamed road to Abbotsham approximately 120 m west of the A39 Abbotsham Cross roundabout. – A39 East: creation of site access on the unnamed road towards Littleham approximately 165 m south of Clovelly Road. – A386: improvement of an existing junction along the A386 with an unnamed road towards Littleham. – Gammaton Road Compound: a new access will be created approximately 70 m east of Tennacott Lane. **Operation and Maintenance phase** • Maintenance to the High Voltage Direct Current (HVDC) and High Voltage Alternating Current (HVAC) Cables will be undertaken only as required. Corrective activities will be limited. • Operational outdoor lighting at the Converter Site boundary would normally be restricted to motion-activated security lighting. **Decommissioning Phase** Decommissioning is likely to operate within the parameters identified for construction (i.e., any activities are likely to occur within construction working areas and to require no greater amount or duration of activity than assessed for construction).	
Permanent loss habitat (improved	✓	×	×	**Construction phase** Up to 39.5 ha of habitat loss/disturbance due to:	Maximum areas proposed for construction and operation. Habitats affected include arable and

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
grassland and arable land) as a result of construction of Converter site				• Earthworks to establish development platforms, screening bunds and export of surplus material. • construction of converter stations and other infrastructure at the Converter Site; and • creation of construction compound. The Converter Site area is up to 395,000 m^2, comprising the converter buildings, landscaping, drainage and compound. Temporary construction compound (Converter Site) is 20,000 m^2 in additional to permanent footprint. Duration of construction would be 72 months. There would be a permanent loss of 1,998 m of hedgerow, 15.00 ha of improved grassland, 1.36 ha of poor semi-improved grassland, 20.50 ha of arable land and 0.012 ha of woodland. Remaining areas consist of bare ground and hardstanding related to existing structures.	improved grass leys and permanent removal of hedgerows. Habitats may support protected species such as breeding birds, bat flight lines, dormice, badgers and reptiles.
				Operation and Maintenance phase Permanent loss of habitat would occur during the construction phase of the Proposed Development.	
				Decommissioning It is assumed that impacts relating to decommissioning (if required) would not exceed those required for construction and would be reduced due to the lower ecological baseline likely to be present at the site due to the extended operational period.	
Temporary loss of habitat as a result of construction and decommissioning of Onshore HVDC	✓	×	✓	**Construction phase** Up to 105.3 ha of temporary habitat loss/disturbance as a result of: • 87 ha for the Onshore HVDC Cable Corridor; and • 11.05 ha for the HVAC Cable Corridors. This will result in the temporary loss of 23.48 ha of improved grassland, 21.58 ha of arable land, 5.57 ha of poor semi-improved	Maximum gross area proposed for full length (at full width) of cable routes, representing the maximum likely impact. Measures to reduce width at hedgerows are likely to result in reduced total area of habitat loss (and these have been addressed in the temporary loss of

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
and HVAC Cable Corridors				grassland, 0.047 ha of woodland, with remaining areas covered by bare ground and hardstanding. Specifically, the following parameters would represent the MDS for the construction of the HVAC and Onshore HVDC Cable Corridors: • Onshore HVDC Cables – Open cut trenching: The maximum number of trenches would be two, with an approximate depth of 1.4 m. spaced at least 12 m apart. A haul road up to 7 m wide will typically run alongside. – There would be a total of 34 joint bays and 34 link boxes, with 140 m^3 and 3.15 m^3 of material excavated- for each joint bay and link box, respectively. – The working area will be sited in the construction corridor with a width of 65 m, for a length of up to 14.5 km. Duration of up to 36 months including an extended period when the haul road will not be active use. • Cable easement is assumed to be 32 m, with the typical gaps to be created in hedges being 14 m to accommodate the two cable trenches; and extending to typically 20 m where the haul road runs alongside the cables because it cannot be aligned to existing field gates and entrances. – HDD locations is six. Each major HDD location will have two compounds, measuring up to 10,000 m^2. – The main construction compound at Gammaton Moor would measure up to 63,000 m^2. The duration of this compound would be 72 months, as it would also support the construction of the Converter Site. – The secondary construction compound (A39 compound) would measure up to 48,000 m^2, and have a duration of 36 months. • AC Cables Connection – Open cut trenching: The maximum number of trenches would be four, with an approximate depth of 1.4 m.	hedgerows topic below). Habitats affected have potential to support breeding birds and reptiles.

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				The working area will include a construction corridor width of 65 m (32.5 m for each bipole), with a length of up to 1.2 km. Duration of 12 months over two phases (6 months per bipole).	
				Operation and Maintenance phase Operation and maintenance of the cable routes are unlikely to have significant additional impacts on habitats or wildlife, as existing habitats are to be reinstated.	
				Decommissioning It is assumed that impacts relating to decommissioning (if required) would not exceed those required for construction and would be reduced due to the lower ecological baseline likely to be present at the site due to the extended operational period..	
Temporary loss of habitat as a result of landfall HDD compound and other construction compounds associated with cable route construction	✓	×	✓	**Construction phase** The construction compounds would result in temporary loss of 28.1 ha as a result of: • HDD compound at landfall site – 10,000 m^2; • main construction compound (Gammaton Road) - 63,000 m^2; • secondary construction compound (A39) - 48,000 m^2; and • converter compound - 20,000 m^2; and • Other HDD compounds – 10,000 m^2 each.	Maximum compound sizes have been assumed. Habitats affected may support breeding birds and reptiles and compounds will have potential to disturb adjacent habitats supporting dormice, bats and potentially other species.
				Operation and Maintenance phase Operation and maintenance of Landfall is unlikely to have significant additional impacts on habitats or wildlife, as existing habitats to be reinstated. Other construction compounds are temporary in nature and will be reinstated at end of construction period.	
				Decommissioning It is assumed that impacts relating to decommissioning (if required) would not exceed those required for construction and would be reduced due to the lower ecological baseline likely to be present at the site due to the extended operational period.	

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				Some compounds would be required if decommissioning were to occur but would not be greater than those required for construction.	
Temporary loss of hedgerows as a result of construction and decommissioning of the Onshore HVDC and HVAC Cable Corridors and provision of road widening measures along Gammaton Road and elsewhere.	✓	×	✓	**Construction phase** Temporary loss of sections of Devon hedge and hedgerow as a result of: • Cable route crossings along entire length of cable routes (1,085 m for HVDC and HVAC combined) • Widening of Gammaton Road to create two lane carriageway *circa* 500m • Selective widening of Gammaton Road *circa* 2km at intervals to create passing places • Widening of unnamed road between Gammaton Cross and Converter Site including a short section of new road to connect Gammaton Road and the unnamed road *circa* 3km • Remodelling junction between A386 and Wooda Road at Appledore • Creation of accesses to onshore HVDC cable route construction sites including: – Creation of remodelled junction at A386 and unnamed road to Littleham. – Widening of junction at the Cornborough sewage treatment works access. – Access to other major compounds at A39 (north and south) and Gammaton Road. • Road improvements and access points would result in the temporary loss of 5.282 km of hedgerow.	This assessment assumes that hedgerow crossings will be reduced in width at all locations to a maximum width of 25 m. It is expected that the majority of hedgerow crossings will be reduced to 15m by aligning haul roads to existing field gates and entrances. Localised cutting back of the hedgerow canopy is anticipated at field access gates used by the haul road. Hedgerows are recognised as an important feature both intrinsically (i.e., as "important" under the Hedgerow Regulations 1997), but also as important habitat features for wildlife such as dormice, breeding birds and as foraging and commuting routes for bats.
				Operation and Maintenance phase Operation and maintenance of cable routes will not result in additional impacts, as maintenance operations are unlikely to require further hedgerow removal.	

Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				Decommissioning It is assumed that impacts relating to decommissioning (if required) would not exceed those required for construction and would be reduced due to the lower ecological baseline likely to be present at the site due to the extended operational period.	

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

1.10 Assessment of Construction Effects

Introduction

1.10.1 The impacts of the construction of the Proposed Development have been assessed. The impacts arising from the construction phase of the Proposed Development are listed in **Table 1.15**, along with the maximum design scenario against which each impact has been assessed.

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

Statutory Designated Sites

1.10.3 Potential indirect effects on statutory designated sites as a result of contamination events (by air or water) reaching the sites via existing pathways. Particularly susceptible would be the Kynoch's Foreshore LNR on the Torridge Estuary and the Taw-Torridge Estuary SSSI, which lies downstream of the Proposed Development. There is also some potential for direct impacts to the Mermaid's Pool to Rowden Gut SSSI on the coast at the Landfall.

1.10.4 The Mermaid's Pool to Rowden Gut SSSI is designated for its geological interest, and specific impacts relating to potential damage associated with the Landfall are addressed in Volume 2, Chapter 4: Geology, Hydrogeology and Ground Conditions of the ES. This topic is not considered further in this Chapter.

1.10.5 There is also some potential for disturbance to species for which the sites are designated, such as migratory and wintering birds, which use the areas off the Landfall and the estuary at Kynoch's Foreshore. However, relatively low levels of use by these species at these locations have been found during the surveys undertaken (see Volume 2, Appendix 1.8: Breeding, Wintering and Migratory Bird Survey of the ES).

Sensitivity of the Receptor

1.10.6 Statutory designated sites associated with the Taw Torridge Estuary (Taw Torridge Estuary SSSI and Kynoch's Foreshore LNR) are vulnerable to effects on water quality and some potential effects from disturbance during construction work. This should be considered in the light of baseline conditions which include the presence of the major A386 road and the Tarka Trail cycle path lying immediately to either side of the River Torridge at the proposed crossing location.

1.10.7 As the river at both locations is tidal, recoverability of the watercourse itself from minor spillages or contamination events is likely to be good. However effects on species utilising it (such as birds, otters and fish) may be significant.

1.10.8 The statutory designated sites are therefore sensitive to impacts both from direct effects and also from indirect sources such as those from adjacent areas or locations upstream, from which there is a direct pathway.

1.10.9 They are therefore assessed as of **high/National** sensitivity.

Magnitude of Impact

1.10.10 The magnitude of potential impact resulting from possible contamination issues (by air or water) is likely to be small, and only likely to occur if proposed mitigation (relating to production and implementation of an On-CEMP) included with the scheme is not properly implemented or adhered to.

1.10.11 The magnitude of potential impact from disturbance to species using adjacent designated areas (or populations of species associated with the designated areas) from construction activity associated with the HDD compounds at Landfall and at the Torridge Estuary are likely to be Low, taking into account existing conditions in these areas.

1.10.12 Current levels of human activity are consistently high during the day due to presence of well-used footpaths, such as the South West Coast Path adjacent to the landfall site and the Tarka Trail footpath and cycle track running along the Torridge Estuary.

1.10.13 Construction activity will result in additional human activity and noise and vibration within the HDD compounds, although these will be set some distance from the designated sites.

1.10.14 The effects discussed above are considered as follows:

- the impacts are indirect;
- the impact is medium term (with a 36 month construction period for the Onshore HVDC Cable Corridor); and
- the impact is likely to be intermittent;

1.10.15 The impact is predicted to be of local spatial extent and intermediate in medium term. The magnitude is, therefore, **low adverse**.

Significance of the Effect

1.10.16 The sensitivity of the receptor is **High/National**. Considering the mitigation measures adopted as part of the project, the significance of effects of potential contamination on the Taw Torridge Estuary SSSI and Kynoch's Foreshore LNR would be **low adverse**. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.17 In order to ensure disturbance to the coastal area around the Mermaid's Pool to Rowden Gut SSSI and Kynoch's Foreshore LNR, a suitable set of compound screening should be included within the design of the HDD compound areas at landfall and estuary crossing points. These should also be implemented at all other HDD compounds as they are located adjacent to other sensitive ecological features as set out in paragraphs below.

1.10.18 The residual magnitude of impact with this mitigation in place would be Negligible. This would result in a **minor adverse** significance of effect overall, which is not significant.

Future Monitoring

1.10.19 Monitoring of water quality particularly at locations downstream of all HDD crossings of watercourses should be undertaken on a monthly basis for the duration of the construction period to ensure that no contamination is occurring which could affect sites downstream. Monitoring of watercourses is set out in the Outline On-CEMP (document reference 7.7).

Locally Designated Sites

1.10.20 There are a large number of locally designated sites within 2 km of the Proposed Development. Of these, two CWS and an UWS are lying under the footprint of the Onshore Infrastructure Area. These are Abbotsham Cliff CWS, Torridge Estuary CWS and Lodge Plantation UWS.

1.10.21 A further three CWS lie immediately adjacent to the Onshore Infrastructure Area. These are Haddacott Moor CWS, Hallsannery CWS and Tennacott Woods CWS.

1.10.22 The scheme design would avoid direct impacts of habitat loss from the designated sites as the HDD compound at Landfall has been located to avoid the unimproved grassland habitats, coastal grassland and scrub habitats comprising the Abbotsham Cliff CWS. Both the Torridge Estuary CWS and Lodge Plantation UWS would be avoided as they would be tunnelled beneath by the HDD crossing of the Torridge Estuary, with compounds lying outside the designated sites on both sides.

1.10.23 The boundary of the HDD compound on the eastern side of the River Torridge will have a minimum 15 m stand off from Lodge Plantation UWS which bounds the field in which the compound will be located.

1.10.24 The boundary of the HDD compound on the western side of the River Torridge will have a minimum 15 m stand off from Hallsannery CWS which bounds the field in which the compound will be located.

1.10.25 The cable installation working area/haul road will be a minimum of 20 m from the boundary of Tennacott Woods CWS and Haddacott Moor CWS.

1.10.26 There are some potential indirect effects on locally designated sites as a result of contamination events (by air or water) reaching the sites via existing pathways. Particularly susceptible would be the six sites identified above, due to their proximity to the Proposed Development.

Sensitivity of the Receptor

1.10.27 Locally designated sites associated with the Taw Torridge Estuary (Torridge Estuary CWS and Lodge Plantation UWS) are vulnerable to effects on water quality and some potential effects from disturbance during construction work. This should be considered in the light of baseline conditions which include the presence of the major A386 road and the Tarka Trail cycle path lying immediately to either side of the River Torridge at the proposed crossing location.

1.10.28 As the river at both locations is tidal, recoverability of the watercourse itself from minor spillages or contamination events is likely to be good. However effects on species utilising it (such as birds, otters and fish) may be significant.

1.10.29 Other locally designated sites, such as the Abbotsham Cliffs CWS, Hallsannery CWS and Tennacott Woods CWS lie close to construction areas and are primarily at risk from air-borne contamination from construction and disturbance to wildlife from construction activities. Opportunities for recovery from contamination incidents would be limited and dust deposition could affect habitats adjacent to working areas where soils are exposed for an extended period of time.

1.10.30 The locally designated sites are therefore sensitive to impacts both from direct effects and from indirect sources such as those from adjacent areas or locations upstream, from which there is a direct pathway.

1.10.31 Locally designated sites are assessed as of **medium/County** sensitivity.

Magnitude of Impact

1.10.32 The magnitude of potential impact resulting from possible contamination issues (by air or water) is likely to be small, and only likely to occur if proposed mitigation (documented in the final On-CEMP (included with the scheme) are not properly implemented or adhered to.

1.10.33 The magnitude of potential impact from disturbance to species using adjacent designated areas (or populations of species associated with the designated areas) from construction activity associated with the HDD compounds at Landfall and at the Torridge Estuary are likely to be Low, taking into account existing conditions in these areas. Current levels of human activity are consistently high during the day due to presence of well-used footpaths, such as the South West Coast Path adjacent to the Landfall and the Tarka Trail footpath and cycle track running along the Torridge Estuary.

1.10.34 Construction activity will result in additional human activity and noise within the HDD compounds, although these will be set some distance from the designated sites.

1.10.35 The effects discussed above are considered as follows:

- the impacts are indirect;
- the impact is medium term (with a 36-month construction period for the cable route); and
- the impact is likely to be intermittent;

1.10.36 The impact is predicted to be of local spatial extent and medium term duration. The magnitude is, therefore, **low**.

Significance of the Effect

1.10.37 The sensitivity of the receptor is **medium/County**. Taking into account the mitigation measures adopted as part of the project, the potential indirect dame or contamination of adjacent sites (Abbotsham Cliff CWS, Torridge Estuary CWS, Hallsannery CWS and Tennacott Woods CWS) is **Low Adverse.**

1.10.38 The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.39 No additional mitigation is proposed specifically in relation to the locally designated sites, in addition to the environmental protection measures referred to in **section 1.8** above. However, monitoring of habitats on adjacent locally designated sites will be required during construction to ensure that construction activities are not affecting their value.

1.10.40 This would result in no change in the residual magnitude of impact with this mitigation in place. This would result in a **minor adverse** significance of effect overall, which is not significant.

Future Monitoring

1.10.41 Monitoring of water quality particularly at locations downstream of all HDD crossings of watercourses should be undertaken on a monthly basis for the duration of the construction period to ensure that no contamination is occurring which could affect sites downstream. Watercourse monitoring details are set out in the Outline On-CEMP (document reference 7.7).

Hedgerows including Devon Hedges

1.10.42 Direct effects on hedgerows as a result of the construction of the cable route and converter stations. The construction of the cable route and road widening/access improvements would result in a temporary but long term (construction period up to seven years) impact.

1.10.43 The vast majority of hedgerows affected are Devon hedges with a stone and earth bank with hedgerow shrubs in the top of the bank creating a continuous canopy. Many of the devon hedges are managed to annual flailing creating relatively short narrow hedge canopies.

1.10.44 All the gaps that are created in hedgerows on the cable alignment and haul road would be reinstated /recreated on a like-for-like basis. For Devon hedges this will reuse using equivalent materials and substrate wherever possible with re-instatement undertaken by specialist contractors.

1.10.45 For highway improvements, the widening of junctions and sections of road will result in the avoidable loss of roadside hedgerows. Replacement hedgerows will be constructed on planted outside the footprint of the realigned carriageway. Where possible, hedgerow construction would be completed in advance of loss or sections of hedgerow/hedge bank would be translocated to be new alignment alongside the dismantling of the original features.

1.10.46 New hedgerows will be created as part of the landscape design package for the Converter Site. This is anticipated to be at the end of the construction period.

1.10.47 For the hedgerow gaps created by the cable alignment the Devon hedge reconstruction and hedgerow replanting will be carried out at completion of cable installation and removal of the haul road.

1.10.48 Selected hedgerows (as shown in Figure 1.4) will also be subject to enhancement through additional shrub and tree planting to fill gaps and strengthen the field boundaries. Where landowner permission is obtained new hedgerows will be created at selected locations adjoining woodland where the

existing field boundary is defined by a fence. This will locally increase connectivity within the existing hedgerow network.

Sensitivity of the Receptor

1.10.49 Devon hedgerows are considered an important ecological feature of the county. The habitats contained in them offer opportunities for a range of wildlife, and the network of hedgerows lying across the countryside offers a substantial connective system, providing links between areas of important habitat and other ecological features across the landscape.

1.10.50 As hedgerows across the Proposed Development have been assessed as potentially supporting dormice (a "European" protected species), they must also be considered as "important" hedgerows in terms of the Hedgerows Regulations 1997.

1.10.51 The sensitivity of Devon hedges is not simply reliant on their intrinsic species diversity and quality but also on their value as connective features. In considering their sensitivity, it is necessary to take into account:

- hedges are a man-made feature but may have been in place for considerable lengths of time, leading to substantial species diversity. This, in conjunction with their function as connective features, means that although they are eminently re-creatable, they are somewhat vulnerable to breaks in connectivity; and
- under careful management, hedgerows are able to recover reasonably quickly, and while gaps may take some time to regain a full species complement and structure, they are likely to recover their connective value relatively quickly.

1.10.52 The sensitivity of the Devon hedges and hedgerows within the Proposed Development is **medium/County**.

Magnitude of Impact

1.10.53 The construction of the Onshore HVDC Cable Corridor inclusive of construction compounds and temporary access arrangements would cross 87 Devon hedges and result in the temporary loss of up to 1,085 m of Devon hedgerow.

1.10.54 Road widening and access works would affect generally small section of 33 hedgerows and result in loss of 5,282 m with Devon hedges (to be reinstated along the sides of the realigned roads).

1.10.55 The construction of the Converter Site would affect 13 hedgerows and result in the permanent loss of 1,998 m of hedgerow.

1.10.56 This would result in the following:

- direct temporary impact in those areas where hedges will be reinstated post construction;
- direct permanent impact on hedges lost and not reinstated as part of the Converter Site/Substation Site construction (although taking into account the provision of new hedgerows is part of the Converter Site landscape scheme);
- construction impacts are considered to be long term as construction programme is up to seven years; and

- the temporary loss of hedgerow resulting from the cable route and access improvement works would generally be intermittent.

1.10.57 The impact is predicted to be of local spatial extent and long term duration. The magnitude is, therefore, **medium** adverse.

Significance of the Effect

1.10.58 Overall, the sensitivity of the receptor is **Medium/County**. Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary and permanent habitat loss to Devon hedgerows would be Medium adverse.

1.10.59 The effect will, therefore, be of **moderate adverse** significance, which is significant.

Further (Secondary) Mitigation and Residual Effect

1.10.60 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to Devon hedges.

Future Monitoring

1.10.61 An aftercare monitoring period of five years would be put in place to monitor progress towards re-establishment of Devon hedges post construction period. Monitoring and aftercare of hedgerow re-establishment is set out in the oLEMP.

Streams with Wooded Banks

1.10.62 Streams with wooded banks are an important ecological feature which will be crossed by, or are located close to, the Onshore HVDC Cable Corridor within the Onshore Infrastructure Area. These occur at Kenwith Stream, north of Abbotsham, two small tributaries west of West Ashridge Farm both north of Littleham (see Volume 2, Appendix 1.1).

1.10.63 A further ditch/watercourse lies on the southern boundary of the Converter Site.

1.10.64 In the case of Kenwith Stream the proposed crossing location is at a point where woodland bankside habitat is minimal and consists of an irregular line of mature trees and the crossing is to be achieved using HDD or similar methods. In the case of the stream west of West Ashridge Farm, the crossing is to be undertaken using HDD or similar methods which would avoid any direct impacts on the stream and bankside woodland vegetation.

1.10.65 There will be a surface crossing of a scrubby field drain with downstream connectivity to Jennetts reservoir. At this location the cable will be installed using methods to minimise impacts on the ditch, bank-side vegetation and downstream channels.

1.10.66 Potential indirect effects on streams with wooded banks remain as a result of contamination events (by air or water) and possible disturbance to wildlife utilising the watercourses.

Sensitivity of the Receptor

1.10.67 Streams with wooded banks are important ecological features as in addition to their intrinsic value, they offer habitat of value to other species and groups, providing opportunities for shelter, foraging and migration to species such as bats, dormice, otters, birds and invertebrates.

1.10.68 In considering the sensitivity of streams with wooded banks, it is necessary to take into account:

- streams with wooded banks are important landscape features and can form pathways to a wider network of watercourses and water features. They are therefore considered to be sensitive in nature;
- these features are difficult to replicate quickly and fully and their potential as pathways to lead contamination to other connected features is considerable; and
- they are slow to recover from damage;

1.10.69 The sensitivity of streams with wooded banks in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.10.70 The Proposed Development would result in temporary disturbance and risk of contamination incidents to wooded watercourses crossed by HDD during construction.

1.10.71 At Kenwith Stream, Littleham Wood and west of West Ashridge Farm, there would be no direct habitat loss to stream or bank-side woodland. There is some potential for indirect effects of disturbance to the habitats and also some potential for contamination incidents as a result of the proximity of the HDD compounds to the feature.

1.10.72 This could result in the following:

- indirect effects on Kenwith Stream and wooded watercourses at Littleham Wood and west of West Ashridge Farm which are crossed using trenchless techniques;
- direct effects on a ditch channel with flowing water shaded by a mature hedgerow canopy which will be crossed at surface; with hydrological connectivity to Jennetts reservoir;
- indirect effects on the watercourse forming part of the southern boundary of the Converter Site over the 72 month construction period;
- the impacts from surface working and reinstatement of the drain will be medium term, and
- the impact for HDD and surface working are expected to be intermittent (works undertaken in two phases during a 36 month period).

1.10.73 The minimum 15 m stand offs between the HDD compounds and the woodland edge will create a buffer of c.20 m from the watercourses.

1.10.74 The impact is predicted to be of local spatial extent and medium to long term duration. The magnitude is, therefore, **low adverse**.

Significance of the Effect

1.10.75 Overall, the sensitivity of the receptor is medium/County. Taking into account the mitigation measures adopted for surface working and the implementation of good environmental practice at all the HDD compounds, the significance of effects of temporary habitat loss, potential for contamination and disturbance to streams with wooded banks would be **minor adverse**, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.76 No additional mitigation is proposed specifically in relation to the streams with wooded banks, in addition to the screening measures referred to in **section 1.8** above, which should reduce the impact of disturbance on wooded watercourses. Where works cross such streams using HDD methods, care in ensuring temporary working lighting does not spill into the wooded bankside habitats or the water-courses themselves, as they are likely to be used by species such as dormice, otters and bats.

1.10.77 Management of surface water run off (silt fencing) would prevent watercourse from the movement of sediment from exposed soils. The pollution prevention controls would design the HDD compound to further separate chemical storage and use from these sensitive receptors.

1.10.78 This would result in no change in the residual magnitude of impact with this mitigation in place. This would result in an effect of **minor adverse** significance, which is not significant.

Future Monitoring

1.10.79 Future monitoring would relate to assessment of invertebrate levels at the watercourse subject to surface working, to assess any changes in water quality resulting from the Proposed Development.

Improved Grasslands and Grass Leys

1.10.80 Improved grasslands and arable leys are a principal land use along the Onshore HVDC Cable Corridor and within parts of the Converter Site and Alverdiscott Substation site (see Volume 2, Appendix 1.1: Phase 1 Habitat Survey of the ES).

1.10.81 Direct temporary effects on improved grasslands and grass leys will occur because of the construction of the cable route and construction compound areas.

1.10.82 Direct permanent loss will result from the construction of the Converter Site.

Sensitivity of the Receptor

1.10.83 Improved grassland and grass leys are habitats created for agricultural stock production, either for direct grazing or to produce stored fodder such as silage.

1.10.84 Improved grassland and grass leys provide some opportunities for foraging for various species, and if left sufficiently undisturbed during the agricultural cycle, may offer shelter for some groups such as ground-nesting birds.

1.10.85 In considering the sensitivity of the improved grassland and arable leys, it is necessary to take into account:

- these habitats are extremely widespread and common in the region; and
- they are easily and quickly replicated using simple reseeding techniques;

1.10.86 The sensitivity of improved grassland and grass leys in locations affected by the Proposed Development is **negligible/Parish**.

Magnitude of Impact

1.10.87 The construction of the Proposed Development will result in the direct temporary loss of 23.48 ha of improved grassland and grass leys as a result of the construction of the Onshore HVDC Cable Corridor inclusive of compounds and access arrangements.

1.10.88 There will also be a direct permanent loss associated with the construction of the Converter Site and road widening, amounting to 15 ha.

1.10.89 This would result in the following:

- direct temporary and permanent habitat loss;
- temporary loss may be long term as a result of the seven year construction programme; and
- the impact is likely to be continuous for the duration of the construction period.

1.10.90 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **high adverse**.

Significance of the Effect

1.10.91 Overall, the sensitivity of the receptor is Negligible/Parish. Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary and permanent habitat loss of improved grassland and arable leys will be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.92 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to improved grassland and arable leys.

Future Monitoring

1.10.93 No monitoring of improved grasslands and arable leys is proposed.

Poor Semi-Improved Grassland

1.10.94 Poor semi-improved grassland occurs in a few small pockets along the Onshore HVDC Cable Corridor of the Proposed Development (see Volume 2, Appendix 1.1).

1.10.95 Direct temporary effects on poor semi-improved grassland will occur as a result of the construction of the cable route and construction compound areas.

Sensitivity of the Receptor

1.10.96 Poor semi-improved grassland are habitats modified for agricultural stock production, either for direct grazing or to produce stored fodder such as silage.

1.10.97 Poor semi-improved grassland provide some opportunities for foraging for various species, and if left sufficiently undisturbed during the agricultural cycle, may offer shelter for some groups such as ground-nesting birds. In grasslands where agricultural improvements cease (such as soil nutrient enrichment), the grassland would be expected to slowly increase in species diversity, with improvements in the value of the habitat both intrinsically and for groups such as invertebrates.

1.10.98 In considering the sensitivity of the poor semi-improved grassland, it is necessary to take into account:

- these habitats are widespread and common in the region; and
- they can be replicated using simple reseeding techniques.

1.10.99 The sensitivity of poor semi-improved grassland in locations affected by the Onshore Infrastructure Area is **low/District**.

Magnitude of Impact

1.10.100 The construction of the Proposed Development will result in the direct temporary loss of 5.57 ha of poor semi-improved grassland as a result of the construction of the Onshore HVDC Cable Corridor inclusive of construction compounds and temporary access arrangements.

1.10.101 This would result in the following:

- direct temporary habitat loss;
- temporary loss will be medium term for the Onshore HVDC Cable Corridor as a result of the 36 month construction programme and long term for the Converter site with a construction programme up to 72 months; and
- the impact is likely to be continuous for the duration of the construction periods.

1.10.102 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **medium adverse**.

Significance of the Effect

1.10.103 The sensitivity of the receptor is Low/District and taking into account the mitigation measures adopted as part of the project, the impact magnitude is medium adverse.

1.10.104 The significance of effects of temporary and permanent habitat loss of species-poor semi-improved grassland would be **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.105 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to poor semi-improved grassland.

Future Monitoring

1.10.106 No monitoring of semi-improved grasslands is proposed.

Arable Cropland

1.10.107 Arable croplands occur along the Onshore HVDC Cable Corridor and parts of the Converter Site as part of the Proposed Development (see Volume 2, Appendix 1.1).

1.10.108 Direct temporary effects on arable croplands will occur as a result of the construction of the cable route and construction compound areas.

1.10.109 Direct permanent loss will result from construction of the Converter site.

Sensitivity of the Receptor

1.10.110 Arable croplands are habitats created for agricultural food production, either to produce stored fodder for stock or to produce human foodstuffs such as grain.

1.10.111 Arable croplands provide some opportunities for foraging for various species, and depending on the nature of the crop grown, may offer shelter for some groups such as ground-nesting birds.

1.10.112 In considering the sensitivity of arable cropland, it is necessary to take into account:

- these habitats are extremely widespread and common in the region; and
- they are easily and quickly replicated using simple reseeding techniques.

1.10.113 The sensitivity of arable croplands in locations affected by the Proposed Development is **negligible/Parish**.

Magnitude of Impact

1.10.114 The construction of the Proposed Development will result in the direct temporary loss of 21.58 ha of arable cropland as a result of the construction of the Onshore HVDC Cable Corridor inclusive of construction compounds and temporary access arrangements.

1.10.115 There will also be a direct permanent loss as a result of the construction of the Converter Site and road widening exercise. This would amount to 20.5 ha.

1.10.116 This would result in the following:

- direct temporary and permanent habitat loss;
- temporary loss may be long term as a result of the 72 month construction programme; and
- the impact is likely to be continuous for the duration of the construction period.

1.10.117 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **high adverse**.

Significance of the Effect

1.10.118 Overall, the sensitivity of the receptor is Negligible/Parish and taking into account the mitigation measures adopted as part of the project, the magnitude of the impact is high adverse. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.119 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to arable cropland.

Future Monitoring

1.10.120 No monitoring of arable cropland is proposed.

Dormice

1.10.121 Dormice have been identified in hedgerows at a number of locations along the Onshore Infrastructure Area (see Volume 2, Appendix 1.3). Given that historic records and results of previous surveys have identified dormice at other locations on or near to the Proposed Development and the similarity of hedgerow habitats present along the entire length of the Proposed Development, and their inter-connected nature, it is not possible to categorically exclude the presence of dormice at any location within the Onshore HVDC Cable Corridor, construction compounds, road access modifications, HVAC Cable Corridors, or Converter Site.

Sensitivity of the Receptor

1.10.122 Dormice are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

1.10.123 Dormice range and population has declined across the UK and the south west of England is an area where they are still frequently encountered. They are primarily an arboreal species inhabiting suitable woodlands but are also frequently found inhabiting hedgerows connected to woodlands. Their arboreal habits mean that they are somewhat susceptible to effects which create gaps in hedgerows, which may cause loss of connectivity with core habitat areas.

1.10.124 In considering the sensitivity of dormice, it is necessary to take into account:

- the severely declining national population of dormice (both in terms of range and size), but also recognising their relative frequency in Devon; and
- their recorded difficulty in adapting to relatively small losses of habitat, particularly in linear features where breaks may result in severance of connectivity;

1.10.125 The sensitivity of dormice in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.10.126 The construction of the Onshore HVDC Cable Corridor inclusive of construction compounds and temporary access arrangements would cross 87 Devon hedges and result in the temporary loss of up to 1,085 m of Devon hedgerow.

1.10.127 Road widening would affect generally small sections of 33 hedgerows and result in the temporary loss of 5,282 m of Devon hedges (which will be reinstated along the sides of the realigned roads, utilising the existing hedgebank materials in order to maintain as much of the seed bank as possible).

1.10.128 The construction of the Converter Site would affect 13 hedgerows and result in the permanent loss of 1,998 m of hedgerow.

1.10.129 This would result in the following:

- direct permanent habitat loss;
- temporary loss which would be considered long term due to a maximum 72 month construction programme and period during which the replanted hedgerow will re-establish a continuous canopy; and
- the impacts of loss are mainly intermittent across the countryside, including severance of the network of Devon hedges and hedgerows along the 14 km alignment of the cable route.

1.10.130 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **medium adverse**.

Significance of the Effect

1.10.131 The sensitivity of the receptor is medium/Regional and the magnitude of the impact is medium adverse.

1.10.132 Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary and permanent habitat loss for dormice would be **moderate adverse** which is significant.

Further (Secondary) Mitigation and Residual Effect

1.10.133 Advance hedgerow creation will be undertaken prior to the commencement of road improvements on Gammaton Road and the road between Gammaton Cross and the Alverdiscott Substation.

1.10.134 Optimally hedge canopy shrubs (and any trees) cut down to base in winter outside of the bird nesting season and when dormice are hibernating in nests on the ground. Selected hedgerow canopy removal may be undertaken during spring, summer, or early autumn where systematic handsearching has been completed by a licenced dormouse survey licence holder and it is confirmed that there are no dormouse nests in the section to be removed and no active bird nests. Proposals for hedgerow canopy removal outside the optimal season would be subject to approval from Natural England. It is proposed that this would be targeted at hedgerows that have been consistently flailed as part of their agricultural management creating sub-optimal conditions for foraging and shelter.

1.10.135 Optimally the dismantling of hedge banks and excavation of the root systems will be completed outside of the dormouse hibernation season running from November to March.

1.10.136 Clearance works would be carried out at times when the risk of injury to individual dormice is minimised, taking into account dormouse ecology and behaviour. This would mean that optimally upstanding vegetation is cut and removed during the winter period when dormice are hibernating in nests at ground level. Subject to Natural England approval, selected hedgerow removal outside this period will be considered for lower value hedgerow habitat (limited canopy extent subject to annual flailing) where the absence of dormice nests can be confirmed and where there are no active bird nests.

1.10.137 Gaps will be created in almost all of the hedgerows along the Onshore HVDC Cable Corridor. Fragmentation of dormouse habitats on either side of the corridor will be addressed by reinstating connectivity for dormouse across the gaps at key locations where there is linkage to woodland. Branches / brash will be woven into or attached across the top section of Heras fence panel so that when the Heras fence is installed the brash is fully spanning the hedgerow gap.

1.10.138 These bespoke panels will be placed at the end of each working day to join with the hedgerow canopy on either side of the cable route overnight. This will address potential fragmentation of dormouse territories and maintain potential dispersal routes through the landscape. The locations will also align to the hedgerows with highest potential to be flight lines frequently used by an assemblage of bat species (Figure 1.3).

1.10.139 These will be placed across the gaps in key hedgerows at the end of each working day during the 36 month construction period to ensure that connectivity is maintained across the cable corridor.

1.10.140 It is envisaged that they will be an extended period when parts of the haul route will not be in active operation. When periods of over 4 months, "dead-hedging" will be placed across the gaps to temporarily reconnect the hedgerow canopy and provide more robust connections for dormouse across the cable route. The "dead hedge" will comprise rows of interconnected branches forming a continuous furrow. Each dead hedge placed at ground level would be at least 1 m high and 30 cm wide comprising densely packed branches and brash with above ground connectivity to hedgerow canopy on either side.

1.10.141 Dead hedges would be fully reinstated across every hedgerow gap on completion of the cable and will remain in place until a continuous hedgerow canopy re-establishes.

1.10.142 The banks of the Devon hedges will be reconstructed and replanted with native shrub species to reinstate the habitat subject to temporary loss. Narrow dead hedges will be created on the top of the hedge banks, alongside the planted shrubs to provide above ground connectivity for dormouse while the new hedgerow shrubs establish.

1.10.143 In the localised areas where there is more extensive hedgerow loss (such as Gammaton Road), replacement hedgerows will be constructed and planted in advance of the loss of the existing hedge.

1.10.144 Construction activities affecting dormouse habitat will be undertaken under a licence obtained from Natural England covering temporary and permanent damage (primarily Devon hedges and hedgerows). Post-construction mitigation compensation and monitoring will be defined.

1.10.145 A draft licence application and method statement will be submitted to Natural England for consultation to facilitate a Letter of No Impediment (LoNI) being issued in relation to this species.

1.10.146 Successful maintenance of connectivity at intervals along the length of the cable corridor has the potential to substantially reduce fragmentation effects. The retention and protection of woodland with stand offs will retain much of the core habitat and its immediate context. This would result in a reduction in the residual magnitude of impact to low adverse and would result in an effect with the potential to be **minor adverse** significance, which is not significant.

Future Monitoring

1.10.147 As a temporary bridging measures for dormice in hedgerow gaps their effectiveness as a mitigation should be appropriately monitored.

1.10.148 During the construction period suitable trail cameras will be positioned to record movement across the 'temporary bridges' created by branches attached to the top of Heras panels. Monitoring would be undertaken at a minimum of six locations including each location where there has been more frequent evidence of dormouse activity. The trail cams would be placed out for extended periods to assess dormice use of the temporary connective features.

1.10.149 Following completion of the cable route, monitoring for dormouse through the use of nest boxes, nest tubes, and/or footprint tunnels will be undertaken annually for five years and again in years seven and ten, post completion of construction will be carried out. This will comply with monitoring requirements conditioned in the dormouse licence.

Otters

1.10.150 The Taw/Torridge catchments support an important otter population, and the area has been considered a "stronghold" of otter even during the past when otters had declined in most parts of the country.

1.10.151 The surveys (see Volume 2, Appendix 1.6: Otter and Water Vole Survey of the ES) have confirmed the presence of an active otter territory close to the crossing of the River Torridge and extending up the small tributary that links with Jennets Reservoir. Searches of the terrestrial habitats along this watercourse, and the other watercourses (Kenwith stream and the two wooded watercourses between Littleham and West Ashridge) found no evidence of resting places or holts within or adjacent to the Onshore Infrastructure Area.

1.10.152 Otters can have extensive territories with watercourses providing routes through which otters can move through the landscape. Field signs may not be evident in areas that are crossed infrequently. Consequently all the watercourses within and adjoining the Proposed Development are considered to have the potential to be used by otters.

1.10.153 As a mobile species with very large home ranges, the establishment of new holts or resting places in locations directly or indirectly affected by the Proposed Development in advance of commencement of construction cannot be ruled out.

Sensitivity of the Receptor

1.10.154 Otters are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

1.10.155 Otter populations in Britain have recovered substantially from a low in the 1970's to the present, and their range has increased substantially.

1.10.156 In considering the sensitivity of otters, it is necessary to take into account:

- that otters are dependent on specific habitat features (rivers, streams and other water bodies) and their condition, which may be affected by the Proposed Development; and
- otter populations are more robust than in the past, but they may be susceptible to disturbance.

1.10.157 The sensitivity of otters in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.10.158 The Onshore HVDC Cable Corridor will cross the Torridge Estuary and wooded watercourses (Kenwith stream, West Ashridge) by HDD which would reduce the possibility of direct impacts on habitats with the potential to be used as resting places by otter. Construction could result in indirect disturbance to individuals using places of rest in proximity to construction activities. No places of rest have been found at any of the watercourse crossing points but it is recognised that there is potential for the use of these habitats to change over time prior to commencement of construction.

1.10.159 Construction activities would have a low magnitude effect on any otters moving along waterbodies and/or feeding in Jennetts Reservoir and the Torridge estuary.

1.10.160 Construction could result in the following:

- potential indirect disturbance to habitats used by otters (and places of rest if occupied by otters prior to commencement of construction activities);
- these impacts would be medium term, based on 36 month construction programme for the cable route; and
- it is recognised that HDD works at watercourses would be intermittent in nature.

1.10.161 The impact on the otter population is predicted to be of local spatial extent and medium term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.10.162 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is low. Taking into account the mitigation measures adopted as part of the Proposed Development, the significance of effects of temporary disturbance to habitat features of value for otters would be **minor adverse** which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.163 There would be a minimum buffer of 15 m with the establishment a fenced protection zone between all working areas and the wooded Kenwith Stream and watercourse at West Ashridge. The HDD compound on east side of the Torridge River will be set back 15 m from the adjacent woodland. The HDD compound on east side of the Torridge River will be sited back 15 m from the ancient woodland boundary at Hallsannery. These protection zones are stipulated within the Outline On-CEMP (document reference 7.7).

1.10.164 As set out above, screening around all HDD compounds at watercourse crossings would be required to minimise disturbance from construction activities. If temporary working lighting is required at these compounds, it would be necessary to ensure that the lighting was designed in such a way as to prevent light spill onto the watercourse and the littoral vegetation.

1.10.165 This would result in no change in the residual magnitude of impact with this mitigation in place. This would result in an effect of **minor adverse** significance, which is not significant.

Future Monitoring

1.10.166 The presence or absence of otter resting places within 50 m of construction working areas will be confirmed as part of the pre-construction surveys, focussing on the watercourses and adjoining areas of dense cover. Repeat checks of individual watercourse crossings will be made if there is a delay of over a month following the completion the full survey. Where there is extended break in construction activity on the cable route, the survey otter resting places will be completed prior to the restart of works within 200 m of a watercourse.

1.10.167 Post construction, no future monitoring (following the above) would be required in relation to otters.

Bats

1.10.168 Remote recording and transects have been completed in eight locations, mostly close to woodland along the alignment of the Onshore Infrastructure Area and have provided information on the species assemblage using the landscape crossed by the Onshore HVDC Cable Corridor and in which the compounds and Converter Site are located.

1.10.169 An assemblage of at least ten species was recorded at every location including the Annex II species, greater horseshoe, lesser horseshoe and barbastelle.

1.10.170 Where the Onshore HVDC Cable Corridor passes through hedgerows, it will create temporary 15 - 30 m wide gaps in the network and have the potential to influence foraging behaviour and commuting routes.

1.10.171 The survey found that the activity was generally dominated by three species; common pipistrelle, soprano pipistrelle and noctule, all light tolerant species unlikely to be significantly impacted by temporary works. Pipistrelle species foraging activity was heavily localised with the majority of activity associated with sheltered locations. Noctule bats were recorded across the site, and much of the activity associated with commuting through the Onshore Infrastructure Area but there were occasional periods of extended foraging recorded on individual detectors.

1.10.172 Light sensitive species, including greater horseshoe bat, lesser horseshoe bat and barbastelle, and individuals of the genera *Myotis* and *Plecotus* were generally recorded at low levels. The data obtained from the surveyed compound locations did not indicate the presence of potentially important commuting or foraging areas for light sensitive species or Annex II species, although occasional peaks of greater horseshoe bats and barbastelle have been recorded (between 5 and 15 passes per night).

1.10.173 The survey results and species assemblage recorded in 2022 and 2023 was similar to the 2010/2011 data collected for the same corridor for the Atlantic Array scheme including the Alverdiscott Substation Site.

1.10.174 The bat survey data indicates a dynamic usage of the landscape by foraging bats.

1.10.175 Temporary works could result in alteration to commuting routes and foraging behaviour around the areas of permanent infrastructure construction, cable corridor and in locations of highway improvements involving more extensive hedgerow removal.

1.10.176 Species could be disadvantaged through the creation of gaps in hedgerows along the 14.5 km Onshore HVDC Cable Corridor changing commuting routes and potentially altering foraging behaviour with effects varying between species.

1.10.177 Where construction compounds are to be located within the Onshore Infrastructure Area, there is also the possibility of indirect impacts such as disturbance, particularly as a result of construction noise close to any trees or where temporary construction lighting spills onto hedgerows or other features used as flightlines, particularly for more light-sensitive bat species.

1.10.178 A promotion of the individual trees within and adjoining the Proposed Development and trees within woodland will offer roosting opportunities for bats.

1.10.179 With an assemblage of 10 bat species there would be expected to be transitional roosts for most if not all of the species recorded within 2 km of the Proposed Development. Maternity roosts of more commonly occurring species would also be anticipated within 2 km of the Proposed Development.

1.10.180 Excluding areas of woodland subject to HDD, the majority of the trees with roost potential are positioned towards the boundary of the Proposed Development area where avoidance through design will be straightforward. A relatively small number of trees are located in positions where the retention and protection of the tree and RPA is unlikely to be possible (between 4 and 12).

1.10.181 Where hedgerows are temporarily severed by gaps for the Onshore HVDC Cable Corridor, temporary connective structures such as Heras fencing panels suitably anchored, interwoven with branches or camouflage netting to be erected across the gaps overnight will assist in maintaining connective features for bats during the construction period. In periods where regular construction activity is not taking place, these should be reinforced to consist of panels on either side of the fence, suitably braced and covered with camouflage netting and remain in place until hedgerow reinstatement is completed, and establishment is achieved.

1.10.182 Temporary construction lighting should be designed to ensure that there is no light-spill onto adjacent hedgerows, woodland edge or watercourse features likely to be regularly used as flight-lines by multiple species of bat.

Sensitivity of the Receptor

1.10.183 All species of bats are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

1.10.184 The conservation status of bats is varied dependent on species. Some species are rarer and more restricted in range, while others are widespread and relatively common. Those which are rarer and with restricted ranges tend to be more light-sensitive species and are most at risk from potential impacts from development.

1.10.185 Bat species identified during the bat surveys include less common and geographically restricted, light-sensitive species such as western barbastelle and greater and lesser horseshoe bats as well as species that will be common and widespread in the local area including as common pipistrelle.

1.10.186 Rarer, light-sensitive species have been recorded in lower numbers during surveys utilising areas within the Proposed Development for commuting and occasional foraging activity of each of the Annex II species.

1.10.187 In considering the sensitivity of bats it is necessary to take into account:

- the rarity and geographical extent of the species identified. While common species are widespread, the surveys identify that some areas are also utilised by more light-sensitive rarer species;
- the levels of activity recorded at the surveyed locations within the Proposed Development; and
- the likelihood of damage to existing populations.

1.10.188 Based on the survey findings and a precautionary assessment of the use of the Proposed Development as flight lines and foraging areas the activities associated with the Proposed Development will not result in impacts sufficiently severe to affect the status of any of the bat species utilising habitats across the landscape crossed by the Proposed Development.

1.10.189 The sensitivity of bats in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.10.190 Levels of direct impact to bat flightlines along hedgerows severed by the Onshore HVDC Cable Corridor are unlikely to be particularly severe, due to the intended reduction on width of corridor through hedgerows (gaps of 15 – 30 m).

1.10.191 Indirect disturbance of bat activity along boundary hedges of construction compounds where inappropriate lighting and poorly-sited activities occur should be minimised by appointment of ECoW and detailed On-CEMP(s).

1.10.192 The placement of bespoke Heras fencing topped with branches across temporary hedgerow gaps to would maintain flight line connectivity in all directions from trees with the potential to be used by roosting bats.

1.10.193 Temporary disturbance caused by the works is therefore not considered likely to adversely affect the local metapopulation of these species, subject to the retention of dark corridors of value to commuting and foraging bats during the works. On the basis of temporary hedgerow canopy connectivity being

reinstated each night at frequent intervals along the cable corridor hedgerow severance is not considered likely to adversely affect night-time commuting or foraging behaviour.

1.10.194 The cable route will require open trenching through a double line of mature trees to the south of Woodville Farm where eight trees with moderate bat roost potential have been identified within the boundary of the Proposed Development. The loss of some of the trees in this location would be unavoidable to enable the installation of the cable route.

1.10.195 At Hallsannery there is one tree with high bat roost potential and a second with moderate bat roost potential in the centre of the field in which the western HDD compound for the River Torridge will be sited. It is anticipated that both trees and the RPAs will be retained outside the HDD compound. There are also five trees with moderate roost potential in adjacent hedgerows crossed by cable route.

1.10.196 Under a precautionary assessment, it is assumed that not all tree loss will be avoidable. Development could directly affect or indirectly any bat roosts in these trees.

1.10.197 Further trees with moderate bat roost potential are located close to the boundary of the Proposed Development; these include seven trees on the eastern boundary of Lodge Plantation adjacent to the eastern HDD compound for the River Torridge, and four trees located between Town Park Plantation and West Ashridge. There should be no direct impacts on any of these trees. The 15 m woodland edge buffers from the compounds would reduce the potential indirect disturbance from noise.

1.10.198 Assessment of use of trees by bats will be ongoing prior to the commencement of construction activities with the focus on the trees with the potential to be impacted directly or indirectly. It is recognised that maternity roosts in trees would have medium or high conservation value but given the small number of trees where avoidance will not be possible the likelihood of a higher value roost being lost.

1.10.199 Measures to ensure that wherever possible, trees with potential bat roosting features will be avoided and protected from direct impacts and where necessary subject to working practices (as set out in the On-CEMP) to ensure they are protected from noise and light disturbance during the construction of the Proposed Development.

1.10.200 The impacts identified above would result in the following:

- potential direct impacts on bat roosts if present in trees where felling is unavoidable;
- potential indirect impacts on bats using tree roosts in close proximity to construction activities;
- impacts on commuting and foraging from the localised temporary loss of hedgerow habitat;
- these impacts would be permanent (tree loss) or temporary and long term for the duration of the construction programme; and
- the impacts during the installation of the cable are likely to be intermittent in nature.

1.10.201 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **medium adverse**.

Significance of the Effect

1.10.202 Taking into account the mitigation measures adopted as part of the Proposed Development, the significance of effects of temporary disturbance and potential loss of trees with potential for bat roosting would be moderate adverse.

1.10.203 Overall, the sensitivity of the receptor has the potential to be medium/Regional and the magnitude of the impact has the potential to be medium. The reasonable worst case effect taking into account the potential for avoidance if trees is classified as **moderate adverse** significance, which is significant.

Further (Secondary) Mitigation and Residual Effect

1.10.204 Measures to maintain flightline connectivity and screen temporary HDD compounds and other temporary construction compounds as set out in **Table 1.14** above will assist in limiting effects on bats from construction activity.

1.10.205 Bats are a very mobile species and for some species a single male bat will often use multiple transitional day roosts during an active season. Consequently, use of the trees with the potential to be impacted by construction activities is under review and will be supported by up to date survey information collected in each active season.

1.10.206 Under the adopted precautionary approach, it is recognised that bat roosts may be detected in trees where avoidance of impacts is not possible. Protected species licensing will be required where any such trees will be removed or where works will be carried out sufficiently close to them to cause disturbance to the bats utilising the roost.

1.10.207 When survey data provides sufficient information on roosts affected (species, type, conservation value), a draft licence application will be submitted to Natural England to allow them to consider whether a Letter of No Impediment (LONI) can be issued in relation to this species.

1.10.208 This would result in no change in the residual magnitude of impact with this mitigation in place. This would result in an effect of **Moderate adverse** significance, which is significant.

Future Monitoring

1.10.209 Where artificial roost boxes are installed for compensation or enhancement purposes, annual monitoring of these for evidence of use by bats would be undertaken by a suitably licensed ecologist for a period of five years after completion of construction.

Badgers

1.10.210 Badgers are a common species in England but are protected primarily as a welfare measure by the Protection of Badgers Act 1992.

1.10.211 No badger setts and little evidence of badger activity have been identified along the Onshore HVDC Cable Corridor of the Proposed Development (see Volume

2: Appendix 1.7: Badger Survey of the ES). Although badgers are common in many parts of Devon, the survey result indicates they are currently absent for the Proposed Development which falls within an area that is subject to licensed badger culling (in order to prevent the spread of Bovine Tuberculosis in cattle).

1.10.212 Based on current understanding of badger activity, there would be no direct or indirect impacts on badgers because of the Proposed Development. However, badgers are a mobile species, and it is possible that badgers may reinhabit disused setts and/or create new setts within the Proposed Development boundary prior to commencement of construction. Therefore following the precautionary approach, a consideration of potential impacts has been undertaken.

Sensitivity of the Receptor

1.10.213 Badgers are widespread and generally not subject to particular pressures. They have increased their range across England and Wales since the 1970s.

1.10.214 Badgers are subject to protection of individuals from disturbance while occupying their setts or places of rest, and in addition damage to setts is prohibited.

1.10.215 In considering the sensitivity of badgers, it is necessary to consider the following:

- badgers are common and robust species that is given legal protection primarily for their welfare;
- badgers are currently subject to licensed culling in some areas, due to their reported transmission of bovine tuberculosis; and
- they are strongly territorial in behaviour, tending to live in social groups defending a clearly defined territory, which may vary naturally as groups expand or contract.

1.10.216 The sensitivity of badgers in locations affected by the Proposed Development at the time of construction has the potential to be **negligible/Parish**.

Magnitude of Impact

1.10.217 The assessment is carried out on the assumption that a sett could be excavated in a location that would be damaged by the construction work required for the Proposed Development.

1.10.218 That scenario would result in a magnitude of impact resulting in the following:

- direct effects upon an occupied badger sett, such as potential damage to the sett and disturbance to badgers occupying the sett;
- this impact would be long term as a result of the 36 month construction programme for the cable route or 72 month construction programme for the Converter Site; and
- this impact would be continuous as it would result in the need to close the sett under licence (dependent on hypothetical sett location).

1.10.219 The impact is predicted to be of local spatial extent and long term duration and would be **low adverse**.

Significance of the Effect

1.10.220 The sensitivity of the receptor has the potential to be Parish and taking into account the mitigation measures adopted as part of the Proposed Development, the magnitude of the impact could be low adverse.

1.10.221 The significance of effects of disturbance and potential damage to occupied badger setts would be **minor adverse**, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.222 If pre-commencement surveys identify a badger sett in a location which will be affected by the Proposed Development, additional mitigation could be required to satisfy a licence application under the Protection of Badgers Act 1992.

1.10.223 This could include temporary or permanent sett closure, the creation of an artificial sett or other measures to allow the use large machinery within 30 m of sett entrances.

1.10.224 This would result in no change in the residual magnitude of impact with this mitigation in place. This would result in an effect of **minor adverse** significance, which is not significant.

Future Monitoring

1.10.225 No specific monitoring for badger activity is proposed, other than the pre-commencement surveys. Should a licensed sett closure become necessary additional monitoring would be required as part of the measures detailed in the licence method statement.

Breeding Birds

1.10.226 Breeding birds are all protected under the Wildlife and Countryside Act 1981 (as amended).

1.10.227 The habitats affected by the Proposed Development include a number which are likely to be used by breeding birds. These include hedgerows, trees, grassland and arable fields.

1.10.228 There will be temporary loss of hedgerow, grassland and cropland habitats as a result of the Onshore HVDC Cable Corridor and permanent loss of these habitats as a result of the construction of the Converter Site and highways improvements.

Sensitivity of the Receptor

1.10.229 The breeding bird survey indicates that the assemblage identified along the Onshore HVDC Cable Corridor are generally of common species, predominantly utilising hedgerow habitats, although some ground nesting species are also present.

1.10.230 In considering the sensitivity of breeding birds, the following factors should be considered:

- the rarity or otherwise of the species identified and their dependence on specific locations. A total of 24 species were confirmed to be breeding with a

further seven probably or possibly breeding. Red list species identified as breeding were greenfinch, linnet and skylark. Amber list species were song thrush, dunnock and wren; and

- the availability of alternative appropriate habitats which would remain available to the species, maintaining their current breeding success.

1.10.231 The sensitivity of breeding birds in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.10.232 The construction of the Proposed Development would result in the temporary loss of hedgerow, grassland and arable cropland as a result of the construction of the Onshore HVDC Cable Corridor inclusive of construction compounds and temporary access arrangements. There will also potentially be the permanent loss of a small number of trees with cavity features in which birds could nest.

1.10.233 The construction of the Converter Site and highways improvements would result in permanent loss of hedgerow, grassland, arable cropland and semi-mature trees.

1.10.234 In addition, construction activity may also have indirect effects of disturbance to other areas of similar habitat nearby to the construction works.

1.10.235 Commitments are set out in **Table 1.14** and include measures to provide screening for construction compounds and temporary lighting designs to prevent light spillage on adjacent hedgerows, woodland or other habitat features. These measures would be beneficial for breeding birds.

1.10.236 The impacts identified would result in the following:

- direct loss of habitat suitable for bird breeding, although abundant suitable alternative similar habitat is present in the vicinity;
- indirect disturbance to habitat suitable for bird breeding;
- these impacts would be long-term taking into account the 72 month construction programme, or permanent in relation to those habitats permanently affected; and
- it is likely that the temporary impacts would be intermittent.

1.10.237 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.10.238 The sensitivity of the receptor is medium/County. Taking into account the mitigation measures adopted as part of the Proposed Development, the magnitude of the impact is low adverse. The significance of temporary and permanent habitat loss and disturbance to breeding birds would be **minor adverse**, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.239 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to breeding birds.

Future Monitoring

1.10.240 No specific future monitoring for breeding birds is currently proposed.

Wintering and Migratory Birds

1.10.241 Wintering and migratory birds are an important feature of the area, being one of the reasons for designation of the Taw/Torridge Estuary SSSI which lies 1.25 km to the north of the Onshore Infrastructure Area.

1.10.242 The wintering and migratory bird survey (see Volume 2, Appendix 1.8) found that terrestrial habitats located within the Proposed Development in the vicinity of the Landfall and Torridge Estuary crossing were not used as roosting areas at high tide.

Sensitivity of the Receptor

1.10.243 The wintering bird survey identified 12 species of conservation concern at the coastal (Landfall) site, including nine amber-listed species, two red-listed species and one Annex 1 Birds Directive species.

1.10.244 At the Torridge Estuary crossing location, there were 13 species of conservation concern including eight amber-listed species, three red-listed species and two Annex 1 Birds Directive species. No high tide roosting was recorded within the Onshore Infrastructure Area during the surveys.

1.10.245 In considering the sensitivity of wintering and migratory birds, the following factors should be considered:

- the rarity or otherwise of the species identified and their dependence on specific locations; and
- the availability of alternative appropriate habitats which would remain available to the species, maintaining their current population levels in these locations.

1.10.246 The sensitivity of wintering and migratory birds in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.10.247 The Proposed Development will not affect areas providing important high tide roosting areas for wintering or migratory birds, so direct impacts on this group are limited.

1.10.248 There is some potential for disturbance during construction activity, particularly at Landfall and estuary crossing sites (both sites include proposed HDD compounds).

1.10.249 The impacts identified would result in the following:

- indirect potential disturbance effects;
- these would be medium term as a result of the 36 month onshore HVDC Cable construction programme; and
- the disturbance is likely to be intermittent over that period.

1.10.250 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.10.251 Overall, the sensitivity of the wintering and migratory bird population is medium/County and the magnitude of the impact taking into account the mitigation measures adopted as part of the Proposed Development, is low adverse. The significance of effects of disturbance are classified as **minor adverse**, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.252 No additional mitigation is proposed specifically in relation to wintering and migratory birds, in addition to the screening measures referred to in **Table 1.14**.

1.10.253 This would result in no change in the residual magnitude of impact with this mitigation in place. This would result in a **minor adverse** significance of effect overall, which is not significant.

Future Monitoring

1.10.254 No additional monitoring for wintering and migratory birds is proposed.

Reptiles

1.10.255 Reptiles have been identified as present in some locations associated with the Proposed Development. Common reptile species are protected under the Wildlife and Countryside Act 1981 (as amended).

1.10.256 There are localised areas along the Onshore HVDC Cable Corridor where temporary habitat damage and disturbance could affect reptile populations, with a risk of injury to individuals.

Sensitivity of the Receptor

1.10.257 Although reptiles are still relatively common, their numbers and range has decreased significantly. They are affected by habitat loss and agricultural practices.

1.10.258 Small numbers of reptiles have been identified in locations which would be affected by the Proposed Development particularly associated with the Onshore HVDC Cable Corridor and associated compounds.

1.10.259 In considering the sensitivity of reptiles, the following factors should be considered:

- the low numbers of relatively common species of reptiles identified at locations surveyed;
- the risk to individuals as a result of their limited mobility;
- the presence of suitable habitats for reptiles close to or connected to the areas identified; and

- therefore the overall sensitivity and value of reptiles is assessed as Low/District.

1.10.260 The sensitivity of reptiles in locations affected by the Proposed Development is up to **low/District**.

Magnitude of Impact

1.10.261 The creation of habitats that will have value for reptiles is set out within the Proposed Development design.

1.10.262 The Proposed Development will result in the temporary damage of habitat likely to support reptiles as a result of the construction of the Onshore HVDC Cable Corridor.

1.10.263 All areas of habitat with suitability for reptiles (longer grassland, scrub, bases of hedgerows) have the potential to be used by reptiles where populations are present.

1.10.264 Potential reptile habitat will be permanently lost as a result of the construction of the Converter Site, although surveys undertaken in accessible parts of this area concluded likely absence of reptile species.

1.10.265 Where reptiles are resident there is a risk of injury to individuals as a result of construction activity.

1.10.266 Indirect disturbance of reptiles from noise and vibration is possible where populations are present in habitats adjoining the Proposed Development where construction activities are located close to the boundary.

1.10.267 The impacts identified would result in the following:

- extent of direct temporary loss of reptile habitat (Onshore HVDC Cable Corridor);
- extent of permanent loss of habitat capable of supporting reptiles (Converter Site);
- direct risk of injury to individuals;
- indirect disturbance to adjacent areas;
- this effect is considered long term, taking into account the total construction programme; and
- over the construction period, the effect is likely to be intermittent.

1.10.268 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.10.269 Following a precautionary approach the sensitivity of the receptor is low/District. Taking into account the mitigation measures adopted as part of the Proposed Development, magnitude of the impact of habitat loss, risk of injury and disturbance is low adverse. Overall, the significance of the effect would be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.270 Precautionary working for all site clearance and trenching within habitats of potential value for reptiles under an ecological watching brief. A suitable scheme will be implemented for the safe removal of all captured reptiles from the working area to safe locations. Purpose built refuges will be created in long grass or adjacent to scrub/hedgerows on the boundary of the Proposed Development.

1.10.271 Habitat manipulation and species displacement should be completed in working areas present prior to commencement of clearance. This will involve the removal of potential refuges, reducing the height of vegetation and hand-searches by an ECoW.

1.10.272 Phased cutting of vegetation and subsequent habitat stripping will be supervised by the ECoW encouraging reptiles to move towards adjacent reptile habitat outside the working area where refuges have been built. Individual reptiles would be moved by the ECoW to a nearby refuge. The procedures and ECoW role will be detailed in the final CEMP.

1.10.273 Storage of materials in areas with known reptile populations will be avoided prior to habitat clearance to avoid creating refuges and minimise the potential for injury.

1.10.274 The work programme will avoid the excavation of potential hibernacula features between mid-October and mid-March (including banks, rabbit warrens and cavities around tree roots).

1.10.275 Where areas of high quality reptile habitat adjoin working areas, protective measures will be deployed (such as reptile-proof fencing) to prevent individuals from straying into construction areas and being injured.

1.10.276 Following a precautionary approach, this would result in no change to the residual magnitude of impact with the effect remaining as of **minor adverse** significance, which is not significant.

Future Monitoring

1.10.277 Regular checks for the presence of reptiles within construction working areas will be undertaken, as set out in the Outline On-CEMP (document reference 7.7), to ensure no individuals are injured during the construction process.

1.10.278 Given the very low numbers of reptiles recorded, no specific post construction monitoring of reptile populations is proposed.

Fish

1.10.279 Important populations of migratory fish have been identified within the River Torridge catchment.

1.10.280 The Onshore HVDC Cable Corridor will cross two streams and a minor water course which feed into the Torridge in addition to the Torridge itself. The Proposed Development will use trenchless crossing methods to cross the Kenwith Stream, the watercourse at Dunn Farm and the Torridge itself. Use of this methodology will reduce the potential for direct impacts significantly, but does not completely eliminate potential for indirect impacts in terms of potential contamination of watercourses and disturbance to fish through vibration/noise.

Sensitivity of the Receptor

1.10.281 The numbers of migratory fish recorded from the Torridge catchment, including Atlantic salmon, European eel, lamprey and shad have all declined significantly since the 1970s.

1.10.282 These declines are generally attributed to pollution, climate change and in some cases barriers to migration.

1.10.283 In considering the sensitivity of fish, the following factors should be considered:

- the sensitivity of the species identified, clearly all fish are sensitive to issues of water quality, it is also important to recognise that migratory fish in particular may be affected by disturbance from noise and vibration which could cause fish to deviate from their preferred migration routes; and
- at present, fish stocks cannot be considered to be likely to easily recover from additional pressures placed upon them by the Proposed Development.

1.10.284 The sensitivity of reptiles in locations affected by the Proposed Development is **Medium/Regional**.

Magnitude of Impact

1.10.285 The Proposed Development will result in potential for water borne contamination issues which could occur as a result of poor construction methods which do not control contaminated run-off, spillages or other similar issues.

1.10.286 In addition to the above, there is also a risk that noise or vibration from HDD operations could affect fish migration activity, where HDD operations were not sufficiently deep and carried out in a sensitive manner.

1.10.287 The impacts identified would result in the following:

- Potential reduction in water quality;
- Potential risk of disturbance from noise or vibration;
- this effect is considered long term, taking into account the seven year construction programme, although it is recognised that potential impacts identified above would only relate to HDD activities, which are scheduled to last 12 months per HDD;
- over the construction period, the effect is likely to be intermittent; and
- therefore, the overall magnitude of the impact is low adverse.

1.10.288 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.10.289 Overall, the sensitivity of the receptor is low/District. Taking into account the mitigation measures adopted as part of the project, the significance of effects of habitat loss, risk of injury and disturbance to reptiles would be low adverse.

1.10.290 The significance of effect would, therefore, be **minor adverse**, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.291 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to fish.

Future Monitoring

1.10.292 No specific monitoring for fish is proposed beyond measures relating to general water-quality monitoring.

Aquatic Invertebrates

1.10.293 Aquatic invertebrates in the Kenwith Stream (referred to as Rickards Down Stream in the survey report, Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring of Watercourses to be Crossed of the ES) and the wooded watercourse west of West Ashridge Farm referred to in the same appendix as 'Lower Dunn Farm stream' were relatively low in numbers and in species diversity.

1.10.294 Potential for impacts on aquatic invertebrates could occur as a result of direct damage to streams if crossings not using trenchless crossing methods are undertaken.

1.10.295 Indirect impacts could occur as a result of construction contamination events, if the final On-CEMP(s) measures are not implemented correctly.

Sensitivity of the Receptor

1.10.296 Aquatic invertebrates in streams to be affected by the Proposed Development are limited in both species' diversity and numbers, suggesting that they are of lower value.

1.10.297 In considering the sensitivity of aquatic invertebrates, the following factors should be considered:

- the diversity, size and rarity of the species assemblage at each location. The surveys undertaken to date indicate that water-courses sampled support typical invertebrate assemblages; and
- the potential for significant damage to each assemblage, including its likely recovery success. The use of HDD methods to pass under most water courses will limit direct effects on invertebrates.

1.10.298 The sensitivity of aquatic invertebrates in locations affected by the Proposed Development is **low/District**.

Magnitude of Impact

1.10.299 Crossings at Kenwith Stream and west of West Ashridge Farm are to be completed by trenchless techniques (i.e. HDD) and there are unlikely to be any direct effects on stream habitats as a result.

1.10.300 At those locations, there is a risk of indirect impacts on the streams as a result of construction contamination incidents if the final On-CEMP(s) measures are not fully implemented.

1.10.301 The impacts identified would result in the following:

- direct temporary effects on habitat supporting aquatic invertebrates;
- potential indirect effects on habitat supporting aquatic invertebrates;
- these impacts assessed as long term, taking into account the 36 month construction programme for the Onshore HVDC Cable Corridor; and
- the impacts are likely to be intermittent over the construction period.

1.10.302 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **low adverse**.

Significance of the effect

1.10.303 Overall, the sensitivity of the receptor is low/District. Taking into account the mitigation measures adopted as part of the Proposed Development, the magnitude of the of effects of habitat loss, and potential construction contamination to aquatic invertebrates impact is **low adverse**.

1.10.304 The significance of the effect would, therefore, be of **minor adverse**, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.10.305 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to aquatic invertebrates.

Future Monitoring

1.10.306 As aquatic invertebrate monitoring provides a good indicator of water quality and health.

1.10.307 Monitoring of aquatic invertebrates at locations up and downstream of the Proposed Development will be undertaken annually for five years after completion of construction.

1.11 Assessment of Operation and Maintenance Effects

1.11.1 The impacts of the operation and maintenance phase of the Proposed Development have been assessed. The impacts arising from the operation and maintenance phase of the Proposed Development are listed in **Table 1.15**, along with the maximum design scenario against which each impact has been assessed.

1.11.2 Operation will not result in additional direct effects on habitats, except in situations where repairs to cabling or other infrastructure are required. As the operational life of the cables exceeds the life of the converter stations, significant amounts of cable replacement is not anticipated. In most cases, such replacement would be achieved by drawing new cabling through existing ducts which would not result in significant habitat damage.

1.11.3 Regular maintenance visits to the Converter Site and cable infrastructure are unlikely to cause significant additional disturbance to wildlife species except in

cases where significant longer-term works may be required in close proximity to particularly sensitive features (woodland edge habitats, hedgerows or stream crossings).

1.11.4 Unexpected repairs requiring substantial works will require an assessment of current levels of activity of protected species at the time the repairs are required, with assessments made by qualified ecologists as to the need for licences under legislation of the time for damage to habitat or disturbance to individual protected species.

1.11.5 A description of the likely effects on receptors caused by each identified impact is given below.

Statutory Designated Sites

1.11.6 Kynoch's Foreshore LNR and Mermaid's Pool to Rowden Gut SSSI are the only statutory designated sites considered to be close enough to potentially be affected by operation and maintenance effects.

1.11.7 Operation of the Proposed Development is unlikely to have impacts on any of the statutory designated sites.

Sensitivity of the Receptor

1.11.8 Statutory designated sites are assessed as of **high/National** sensitivity.

Magnitude of Impact

1.11.9 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.10 Overall, the sensitivity of the receptor is high/National and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.11 No further mitigation is proposed in relation to statutory designated sites.

Future Monitoring

1.11.12 No additional future monitoring is proposed.

Locally Designated Sites

1.11.13 There are a large number of locally designated sites within 2 km of the Proposed Development. Of these, two CWS and an UWS lying under the footprint of the Order Limits. These are Abbotsham Cliff CWS, Torridge Estuary CWS and Lodge Plantation UWS.

1.11.14 A further three CWS lie immediately adjacent to the Order Limits. These are Haddacott Moor CWS, Hallsannery CWS and Tennacott Woods CWS.

1.11.15 Operation and maintenance of the Proposed Development is unlikely to have impacts on any of the statutory designated sites.

Sensitivity of the Receptor

1.11.16 Locally designated sites are assessed as of **medium/County** sensitivity.

Magnitude of Impact

1.11.17 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.18 Overall, the sensitivity of the receptor is medium/County and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.19 No further mitigation is proposed in relation to non-statutory designated sites.

Future Monitoring

1.11.20 No additional monitoring is proposed.

Devon Hedgerows

1.11.21 Operation of the Proposed Development is unlikely to have any adverse effects on Devon hedgerows.

1.11.22 As habitats created to provide landscape and biodiversity enhancement and mitigation establish and mature, there is likely to be a small increase in net length and quality of hedgerow.

Sensitivity of the Receptor

1.11.23 The sensitivity of hedgerows in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.11.24 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.25 Overall, the sensitivity of the receptor is medium/County and the magnitude of the impact is low beneficial. The effect will, therefore, be of **negligible** significance in the long term, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.26 No further mitigation is proposed in relation to Devon hedgerows.

Future Monitoring

1.11.27 The status of reconstructed hedge banks and the re-establishment of a continuous hedgerow canopy will be subject to ongoing post-construction monitoring.

1.11.28 During the period when young planted shrubs are developing structure, or when translocated stock are recovering monitoring of the re-establishment of the hedge will be subject to monitoring.

1.11.29 Dead hedges being installed as a temporary measure following hedge planting. These will be primarily low structures with brash created on top of the reconstructed Devon hedge banks alongside the planted shrubs but for the few hedgerows without banks, the dead hedge or 1 m high 30 cm wide structures constructed from branches. Monitoring of hedgerow establishment and the functionality of the dead hedge will continue annually until hedgerow canopy closure. Hedgerow creation is expected to be phased with monitoring anticipated during construction as well as at the end of the construction period.

Dormice

1.11.30 Operation and maintenance of the Proposed Development is likely to result in increased habitat availability for dormice because of the proposed mitigation habitat creation and enhancement.

Sensitivity of the Receptor

1.11.31 The sensitivity of dormice in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.11.32 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.33 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is low beneficial. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.34 No further mitigation is proposed in relation to dormice.

Future Monitoring

1.11.35 No additional future monitoring is proposed.

Otters

1.11.36 Operation and maintenance of the Proposed Development is unlikely to have any significant effects on otters.

Sensitivity of the Receptor

1.11.37 The sensitivity of otters in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.11.38 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.39 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.40 No further mitigation is proposed in relation to otters.

Future Monitoring

1.11.41 No additional future monitoring is proposed.

Bats

1.11.42 There is potential for effects on bat activity and behaviour in the vicinity of the operational Converter Site through an increase in light spill onto habitats that are currently unlit.

1.11.43 Operational lighting will be designed to avoid light spill into adjacent habitat areas. The landscaping at the Converter Site will include the creation of habitats of value for foraging bats. Dark corridors around the boundary of the landscape scheme will continue to be used by rare and light-sensitive species and will protect the context and functionality of the woodland blocks and hedgerows adjoining the Converter Site.

1.11.44 Habitat creation and enhancement has the potential to create and maintain habitat types of higher value to bats than the agriculturally improved landscape on which the converter stations will be constructed.

1.11.45 General site lighting will be designed to avoid effects that could deter light-sensitive bats from using newly-created habitats including hedgerows and woodland.

Sensitivity of the Receptor

1.11.46 The sensitivity of bats in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.11.47 The impact is predicted to be of local spatial extent and long term duration. The magnitude in the long term is **negligible beneficial**.

Significance of the Effect

1.11.48 Overall, the sensitivity of the receptor is Medium/Regional and the magnitude of the impact is Low Beneficial. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.49 No further mitigation is proposed in relation to bats.

Further Monitoring

1.11.50 Bat activity will be monitored (5 day periods of remote recording monthly between May and September) at locations along the Onshore HVDC Cable Corridor following the completion of the replating / reconstruction of the Devon hedges to assess the species assemblage and activity levels following the restoration of temporary gaps. This will be undertaken in Years 2, 4 and 10 following the completion of the cable installation.

1.11.51 Post development bat activity will be monitored at the Converter Site through remote recording in Years 2, 4 and 10 following the completion of construction to compare activity in the landscaped site compared to the arable fields and improved grassland present prior to construction.

1.11.52 Bat boxes installed on trees as enhancement would be subject to periodic monitoring. Separate monitoring requirements would be attached to any bat licences obtained for the loss of tree roosts. Details of the monitoring would defined in the licence method statement to assess the outcomes of alternative roost provision.

Badgers

1.11.53 Operation and maintenance of the Proposed Development is unlikely to have any significant effects on badgers.

Sensitivity of the Receptor

1.11.54 The sensitivity of badgers in locations affected by the Proposed Development is **negligible/Parish**.

Magnitude of Impact

1.11.55 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.56 Overall, the sensitivity of the receptor is negligible and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.57 No further mitigation is proposed in relation to badgers.

Future Monitoring

1.11.58 No additional future monitoring is proposed.

Breeding Birds

1.11.59 Operation and maintenance of the Proposed Development is likely to result in increased habitat availability for breeding birds as a result of the proposed mitigation habitat creation and enhancement.

Sensitivity of the Receptor

1.11.60 The sensitivity of breeding birds in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.11.61 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible beneficial**.

Significance of the Effect

1.11.62 Overall, the sensitivity of the receptor is Medium/Regional and the magnitude of the impact is Low Beneficial. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.63 No further mitigation is proposed in relation to breeding birds.

Future Monitoring

1.11.64 No additional future monitoring is proposed.

Wintering and Migratory Birds

1.11.65 Operation and maintenance of the Proposed Development is unlikely to have any significant effects on wintering and migratory birds.

Sensitivity of the Receptor

1.11.66 The sensitivity of wintering and migratory birds in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.11.67 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.68 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.69 No further mitigation is proposed in relation to wintering and migratory birds.

Future Monitoring

1.11.70 No additional future monitoring is proposed.

Reptiles

1.11.71 Operation and maintenance of the Proposed Development is unlikely to have any significant effects on reptiles.

Sensitivity of the Receptor

1.11.72 The sensitivity of reptiles in locations affected by the Proposed Development is **low/District**.

Magnitude of Impact

1.11.73 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.74 Overall, the sensitivity of the receptor is low/District and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.75 No further mitigation is proposed in relation to reptiles.

Future Monitoring

1.11.76 No additional future monitoring is proposed.

Fish

1.11.77 Operation and maintenance of the Proposed Development is unlikely to have any direct or indirect effects upon watercourses supporting migratory or other fish populations.

Sensitivity of the Receptor

1.11.78 The sensitivity of fish in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.11.79 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.80 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.81 No further mitigation is proposed in relation to fish.

Future Monitoring

1.11.82 No additional future monitoring for fish is proposed.

Aquatic Invertebrates

1.11.83 Operation and maintenance of the Proposed Development is likely to result in no change in conditions for aquatic invertebrates. The operation is unlikely to have substantial effects on watercourses or the creatures which rely on them.

Sensitivity of the Receptor

1.11.84 The sensitivity of aquatic invertebrates in locations affected by the Proposed Development is **low/District**.

Magnitude of Impact

1.11.85 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **negligible**.

Significance of the Effect

1.11.86 Overall, the sensitivity of the receptor is low/District and the magnitude of the impact is negligible. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.11.87 In the case that repairs to infrastructure immediately adjacent to watercourses become required (such as cable replacement or repairs to other infrastructure, repair methods will need to ensure they provide similar safeguards to those provided for the final On-CEMP(s), such as prevention of run-off or other contamination, suitably protected 10 m buffer zones adjacent to water courses and screening where appropriate. No further mitigation is proposed in relation to aquatic invertebrates.

Future Monitoring

1.11.88 No additional future monitoring for aquatic invertebrates is proposed during operation of the Proposed Development.

1.12 Assessment of Decommissioning Effects

1.12.1 Although the Proposed Development is not time-limited and consent is not sought for decommissioning, the impacts of a possible future decommissioning phase have been assessed in this EIA for completeness. Assumptions about the potential impacts that may arise from any future decommissioning the Proposed Development are listed in **Table 1.15**, along with the maximum design scenario against which each impact has been assessed. These assumptions have been informed by the Outline Decommissioning Strategy (document reference 7.17) and professional experience. It is expected that any future decommissioning of the Proposed Development would be carried out under a separate consenting process that would control and monitor the potential environmental effects.

1.12.2 In all cases, it is assumed that decommissioning effects will be no greater than those identified for construction. In most cases they are likely to be significantly reduced because of the likely reduced construction footprint and timescale required for decommissioning, which is assumed to be in the order of one year or less for most operations.

1.12.3 Given the long-time which will elapse prior to a requirement for decommissioning, which is presumed to be 50 years from full commissioning, it will be necessary to review and update all ecological baseline data prior to commencing the decommissioning operation. Over this period, it is likely that the status of populations will have changed, and their preferred habitat areas may no longer be as they are currently described. Protective status and legislation for individual species or groups may have changed in this period.

1.12.4 Reference to all monitoring activity (set out in **section 1.8** of this chapter) over the interim period would be helpful in updating baseline conditions but would be insufficient to ensure that all protected and otherwise notable species were protected from decommissioning work.

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

Statutory Designated Sites

1.12.6 Potential indirect effects on statutory designated sites because of contamination events (by air or water) reaching the sites via existing pathways. Particularly susceptible would be the Kynoch's Foreshore LNR on the Torridge Estuary and to a lesser extent, the Mermaid's Pool to Rowden Gut SSSI on the coast at the Landfall.

1.12.7 The Mermaid's Pool to Rowden Gut SSSI is designated for its geological interest, and specific impacts relating to potential damage associated with the Landfall are addressed in Volume 2, Chapter 4, Hydrogeology, Geology and Ground Conditions of the ES. This topic is not considered further in this Chapter.

Sensitivity of the Receptor

1.12.8 The sensitivity of statutory designated sites in locations affected by the Proposed Development is **high/National**.

Magnitude of Impact

1.12.9 The magnitude of potential impact resulting from possible contamination issues (by air or water) is likely to be small, and only likely to occur if proposed mitigation (relating to production and implementation of an outline decommissioning strategy) included with the scheme is not properly implemented or adhered to.

1.12.10 The magnitude of potential impact from disturbance to species using adjacent designated areas (or populations of species associated with the designated areas) from decommissioning activity associated with the HDD compounds at Landfall and at the Torridge Estuary and other infrastructure features such as link boxes are likely to be low, considering existing conditions in these areas. Current levels of human activity are consistently high during the day due to presence of well-used footpaths, such as the South West Coast Path adjacent to the landfall site and the Tarka Trail footpath and cycle track running along the Torridge Estuary.

1.12.11 Decommissioning activity will result in additional human activity and noise within the temporary decommissioning compounds, although these will be set some distance from the designated sites.

1.12.12 The effects discussed above are considered as follows:

- the impacts are indirect;
- the impact is short term (assuming decommissioning period to be likely less than 1 year);
- the impact is likely to be intermittent; and
- the overall magnitude of the impact is low adverse.

1.12.13 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.14 Considering the mitigation measures adopted as part of the Proposed Development, the significance of effects of potential contamination on more distant sites or contamination and disturbance on more local sites (specifically Kynoch's Foreshore LNR) would be Low Adverse.

1.12.15 Overall, the sensitivity of the receptor is High/National and the magnitude of the impact is Low. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.16 To ensure disturbance to the coastal area around the Mermaid's Pool to Rowden Gut SSSI and Kynoch's Foreshore LNR, a suitable set of compound screening should be included within the design of the decommissioning compounds at Landfall and estuary crossing points. These should also be implemented at all other compounds as they are located adjacent to other sensitive ecological features as set out in paragraphs below.

1.12.17 The residual magnitude of impact with this mitigation in place would be Negligible. This would result in a **minor adverse** significance of effect overall, which is not significant.

Future Monitoring

1.12.18 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional sites will have been designated by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Locally Designated Sites

1.12.19 There is some potential indirect effects on locally designated sites because of decommissioning contamination events (by air or water) reaching the sites via existing pathways. Particularly susceptible would be the six sites identified in

paragraphs 1.10.20 to **1.10.21**, due to their proximity to the Proposed Development.

Sensitivity of the Receptor

1.12.20 Locally designated sites are assessed as of **medium/County** sensitivity.

Magnitude of Impact

1.12.21 The magnitude of potential impact resulting from possible contamination issues (by air or water) is likely to be small, and only likely to occur if proposed mitigation (relating to production and implementation of a management plan) included with the scheme is not properly implemented or adhered to.

1.12.22 The magnitude of potential impact from disturbance to species using adjacent designated areas (or populations of species associated with the designated areas) from decommissioning activity associated with the compounds at Landfall and also at the Torridge Estuary are likely to be low, taking into account existing conditions in these areas. Current levels of human activity are consistently high during the day due to presence of well-used footpaths, such as the South West Coast Path adjacent to the Landfall and the Tarka Trail footpath and cycle track running along the Torridge Estuary.

1.12.23 Decommissioning activity will result in additional human activity and noise within the HDD compounds, although these will be set some distance from the designated sites.

1.12.24 The effects discussed above are considered as follows:

- the impacts are indirect;
- the impact is short term (assuming decommissioning period to be likely less than 1 year); and
- the impact is likely to be intermittent.

1.12.25 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.26 Considering the mitigation measures adopted as part of the Proposed Development, the significance of effects of potential contamination on adjacent sites (such as Abbotsham Cliff CWS or Torridge Estuary CWS) or contamination and disturbance on distant sites would be Low Adverse.

1.12.27 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is Low. The effect will have up to **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.28 No additional mitigation is proposed specifically in relation to the locally designated sites.

1.12.29 This would result in no change in the residual magnitude of impact with this mitigation in place. This could result in a **minor adverse** significance of effect overall, which is not significant.

Future Monitoring

1.12.30 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional sites will have been designated by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Devon Hedgerows

1.12.31 Other than hedgerows associated with the Converter Site (which would have been removed because of construction), it is assumed that there would be no requirement for hedgerow removal during decommissioning, as it is assumed that cabling could be drawn through its existing ducts, requiring no further intrusive damage to hedges. There may be some specific locations where temporary hedgerow removal could be required for access.

Sensitivity of the Receptor

1.12.32 The sensitivity of hedgerows in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.12.33 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.34 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is Low. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.35 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to Devon hedges.

Future Monitoring

1.12.36 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional hedges may have been created by that time, or that hedges currently present have been removed and these would need to be

included in any impact assessment, mitigation and monitoring scheme put into place.

Streams with Wooded Banks

1.12.37 Potential indirect effects on streams with wooded banks could occur because of contamination events (by air or water) and possible disturbance during decommissioning activities.

1.12.38 As with hedgerows it is likely that decommissioning would result in minimal disturbance by simply withdrawing cabling through existing ducts, rather than the need for direct disturbance of the streams and their banks.

Sensitivity of the Receptor

1.12.39 The sensitivity of streams with wooded banks in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.12.40 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.41 Overall, the sensitivity of the receptor is medium/County and the magnitude of the impact is Low. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.42 Measures similar to those set out in the final On-CEMP(s) would be required to ensure adequate protection of streams with wooded banks. These would include measures to protect bank-side habitats and provide adequately-protected 10 m buffers from the water-courses, along with suitable screening and protections against contamination from decommissioning works.

Future Monitoring

1.12.43 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that the invertebrate assemblage supported by the streams has improved in diversity by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place. Similarly, usage of these features by other species such as otters, water voles and newly-occurring species such as beavers may also occur and should be taken into account during monitoring.

Improved Grasslands and Arable Leys

1.12.44 Decommissioning would result in some temporary loss and damage to some areas of this habitat.

Sensitivity of the Receptor

1.12.45 The sensitivity of improved grassland and arable leys in locations affected by the Proposed Development is **negligible/Parish**.

Magnitude of Impact

1.12.46 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.47 Overall, and the sensitivity of the receptor is negligible/Parish and the magnitude of the impact is low. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.48 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to improved grasslands and arable leys.

Future Monitoring

1.12.49 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that areas currently farmed as improved grassland may have been replaced with other, higher value habitats which may be supporting additional species and groups by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Poor Semi-Improved Grassland

1.12.50 Decommissioning could result in some temporary loss and damage to some areas of poor semi-improved grassland.

Sensitivity of the Receptor

1.12.51 The sensitivity of poor semi-improved grassland in locations affected by the Proposed Development is **low/District**.

Magnitude of Impact

1.12.52 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.53 Overall, the sensitivity of the receptor is low/District and the magnitude of the impact is low. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.54 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to species-poor semi-improved grassland.

Future Monitoring

1.12.55 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that poor semi-improved grassland may have been allowed to develop into a higher value grassland habitat by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Arable Cropland

1.12.56 Decommissioning could result in some direct temporary loss and damage to some areas of arable cropland.

Sensitivity of the Receptor

1.12.57 The sensitivity of arable croplands in locations affected by the Proposed Development is **negligible/Parish**.

Magnitude of Impact

1.12.58 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.59 Overall, the sensitivity of the receptor is negligible/Parish and the magnitude of the impact is low. The effect will, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.60 No further mitigation beyond that set out within the Proposed Development design is proposed in relation to arable cropland.

Future Monitoring

1.12.61 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological

baseline present immediately prior to commencement of decommissioning. It is possible that arable fields may have been replaced with production methods more supportive of wildlife or species richness and diversity by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Dormice

1.12.62 Decommissioning works may cause some temporary damage to hedgerows supporting dormice and some temporary disturbance to dormouse habitats adjacent to the works.

Sensitivity of the Receptor

1.12.63 The sensitivity of dormice in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.12.64 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.65 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is low. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.66 Additional reviews of dormouse status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that dormice are appropriately protected during decommissioning.

Future Monitoring

1.12.67 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that dormice have increased their population levels by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Otters

1.12.68 Decommissioning could result in some short term temporary disturbance to water courses used by otters.

Sensitivity of the Receptor

1.12.69 The sensitivity of otters in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.12.70 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.71 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is low. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.72 Additional reviews of otter status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that otters are appropriately protected during decommissioning.

Future Monitoring

1.12.73 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that otter populations may have increased by that time, leading to more potential to encounter their places of rest in locations which could be affected by the decommissioning works. These would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Bats

1.12.74 Decommissioning could result in some temporary direct damage to hedgerows used as foraging or migration flightlines. There may also be short term indirect disturbance to such habitats (potentially including bat roosts which may have been occupied during operational phase).

Sensitivity of the Receptor

1.12.75 The sensitivity of bats in locations affected by the Proposed Development is **medium/Regional**.

Magnitude of Impact

1.12.76 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.77 Overall, the sensitivity of the receptor is medium/Regional and the magnitude of the impact is low. The effect will, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.78 Additional reviews of bat status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that bats are appropriately protected during decommissioning.

Future Monitoring

1.12.79 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional bat roosts will have been occupied by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Badgers

1.12.80 Decommissioning could result in short term damage or disturbance to badger setts which have been excavated and occupied by badgers during the operational period.

Sensitivity of the Receptor

1.12.81 The sensitivity of badgers in locations affected by the Proposed Development is **negligible/Parish**.

Magnitude of Impact

1.12.82 The impact is predicted to be of local spatial extent and short term duration. The magnitude would therefore be **low adverse**.

Significance of the Effect

1.12.83 Overall, the sensitivity of the receptor is negligible/Parish and the magnitude of the impact is low. The effect would, therefore, be of **negligible** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.84 Additional reviews of badger status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that badgers are appropriately protected during decommissioning.

Future Monitoring

1.12.85 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that the current culling regime will have ended by that time and badger setts may occur at many locations along the Proposed Development. These would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Breeding Birds

1.12.86 Decommissioning could result in some small areas of direct temporary breeding bird habitat removal (hedgerows and grassland areas). It could also result in some temporary disturbance to adjacent breeding bird habitats, if works were carried out during the bird breeding season.

Sensitivity of the Receptor

1.12.87 The sensitivity of breeding birds in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.12.88 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.89 Overall, the sensitivity of the receptor is medium/County and the magnitude of the impact is low adverse. The effect would, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.90 Additional reviews of breeding bird status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that breeding birds are appropriately protected during decommissioning.

Future Monitoring

1.12.91 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional bird species will have taken up breeding in locations which could be affected by the decommissioning work by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Wintering and Migratory Birds

1.12.92 Decommissioning work could cause indirect temporary disturbance to areas occasionally used by wintering and migratory bird species. This is particularly the case where cabling was removed.

Sensitivity of the Receptor

1.12.93 The sensitivity of wintering and migratory birds in locations affected by the Proposed Development is **medium/County**.

Magnitude of Impact

1.12.94 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.95 Overall, the sensitivity of the receptor is medium/County and the magnitude of the impact is low adverse. The effect would, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.96 Additional reviews of wintering and migratory bird status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that wintering and migratory birds are appropriately protected during decommissioning.

Future Monitoring

1.12.97 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional wintering or migratory bird species may have begun to utilise areas which could be affected by the decommissioning works by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Reptiles

1.12.98 Decommissioning could result in some temporary damage to habitats used by reptiles, particularly grassland areas adjacent to hedgerows. There is a risk of injury to individual reptiles as a result of demolition and decommissioning works.

Sensitivity of the Receptor

1.12.99 The sensitivity of reptiles in locations affected by the Proposed Development is **low/District**.

Magnitude of Impact

1.12.100 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.101 Overall, the sensitivity of the receptor is low/District and the magnitude of the impact is low adverse. The effect would, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.102 Additional reviews of reptile status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that reptiles are appropriately protected during decommissioning.

Future Monitoring

1.12.103 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional sites will have been populated by reptiles by that time, especially where there have been changes to current agricultural practices leading to changes in habitats present and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place.

Fish

1.12.104 Decommissioning could have direct temporary effects on stream crossings, where the HVDC Cables were to be removed from stream crossings not made by HDD or other under-boring techniques. This could have impacts on fish using the affected section of stream, and potentially stretches downstream of it.

Sensitivity of the Receptor

1.12.105 The sensitivity of fish in locations affected by the Proposed Development is **medium/regional**.

Magnitude of Impact

1.12.106 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **low adverse**.

Significance of the Effect

1.12.107 Overall, the sensitivity of the receptor is **medium/regional** and the magnitude of the impact is **low adverse**. The effect would, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.108 Additional reviews of fish status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that fish are appropriately protected during decommissioning.

Future Monitoring

1.12.109 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional fish assemblages will be present by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place. As a minimum, monitoring of fish should be at the same frequency as those for construction of the Proposed Development for the duration of decommissioning works.

Aquatic Invertebrates

1.12.110 Decommissioning could have direct temporary effects on stream crossings, where the HVDC Cables were to be removed from stream crossings not made by HDD or other under-boring techniques. This could have impacts on aquatic invertebrates using the affected section of stream, and potentially stretches downstream of it.

Sensitivity of the Receptor

1.12.111 The sensitivity of aquatic invertebrates in locations affected by the Proposed Development is **low/District**.

Magnitude of Impact

1.12.112 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore l**ow adverse**.

Significance of the Effect

1.12.113 Overall, the sensitivity of the receptor is **low/District** and the magnitude of the impact is **low adverse**. The effect would, therefore, be of **minor adverse** significance, which is not significant.

Further (Secondary) Mitigation and Residual Effect

1.12.114 Additional reviews of aquatic invertebrate status and licensing requirements at time of decommissioning will be required. A review of decommissioning methodologies will be necessary to ensure that aquatic invertebrates are appropriately protected during decommissioning.

Future Monitoring

1.12.115 As decommissioning lies far into the future, an appropriate future monitoring regime will need to be designed and implemented based on the ecological baseline present immediately prior to commencement of decommissioning. It is possible that additional invertebrate assemblages will be present by that time, and these would need to be included in any impact assessment, mitigation and monitoring scheme put into place. As a minimum, monitoring of aquatic invertebrates should be at the same frequency as those for construction of the Proposed Development for the duration of decommissioning works.

1.13 Cumulative Environmental Assessment

1.13.1 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Proposed Development together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 1, Appendix 5.3: CEA Screening Matrix). Each project has been considered on a case-by-case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial/temporal scales involved.

1.13.2 The onshore ecology and nature conservation CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA methodology of the ES. As part of the assessment, all projects and plans considered alongside the Proposed Development have been allocated into 'tiers' reflecting their current stage within the planning and development process.

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

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

1.13.4 The CEA also considers the Proposed Development and the anticipated National Grid Electricity Transmission (NGET) substation (which will be implemented by NGET and thus, does not form part of the Proposed Development) together. This is because the NGET substation will be required for the connection of the Proposed Development to the national grid.

1.13.5 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 1.16**. The locations of such projects, plans and activities are presented on Volume 4, Figure 1.5 of the ES.

Table 1.16: List of cumulative developments considered within the CEA

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
Tier 1						
1/0359/2024/FULM	Permitted	Partially within the Onshore Infrastructure Area	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 274 no. dwellings, associated infrastructure and open space pursuant outline planning permission 1/0039/2014/OUTM (Amended Plans) (Variation of condition 1 of planning permission 1/1133/2021/REMM). Location: Clovelly Road/A39			Yes
1/0896/2019/DIS	Permitted	Adjacent to the Onshore Infrastructure Area	Business letting units, car parking lots, access, drainage and landscaping. This application forms plot 3 of the previous planning application 1/116/2007/FUL - Bideford Business Park. The application consists of a lorry park and units for letting purposes, the amount being: • Plot 3A: 1,065 sq m; • Plot 3B: 501 sq m; • Plot 3C: 501 sq m; and • Plot 3D: 145 sq m. Each building would have a ridge height of 9.1 m.			Yes
1/1141/2022/LA	Permitted	Adjacent to the Onshore Infrastructure Area	Erection of building for the processing of household recycling materials and food waste, provision of vehicle workshop, office and welfare and all ancillary facilities including access roadway - EX39 4QE			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
1/1057/2021/FULM	Permitted	Partially within the Converter Site	The application includes the installation and operation of a Solar Farm together with all associated works, equipment and necessary infrastructure, with a lifetime of 40 years. The application site is divided into three parcels of land comprising a series of agricultural fields, extending to approximately 156.37 acres. The development included solar PV panels, seven switchgear substations, 14 inverters, 14 transformers, a 132 kV substation, a storage container, a monitoring and communications buildings, security fencing and an internal access track. Location: Near Alverdiscott Substation			Yes
1/1256/2021/REMM	Permitted	0.1 km from the Onshore Infrastructure Area	The application site forms part of a larger area for which outline planning permission comprising up to 550 dwellings, a 1.9 ha primary school site (including neighbourhood building), highway accesses (including the rerouting of Littleham Lane), public open space and other associated infrastructure. The outline application was subject to an Environmental Statement. This application is for the second phase of development which comprises a total of 276 new dwellings, highways, open space which includes areas of play, attenuation features and a sports pitch. Location: Clovelly Road/A39			Yes
1/1266/2022/REMM	Pending	0.1 km from the Onshore Infrastructure Area	The application site forms part of the BID01 allocation. The application includes a development of 61 dwellings including associated works. A new access is proposed onto Clovelly Road.			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			Location: Clovelly Road/A39			
1/0252/2022/OUTM	Permitted	0.9 km from the Onshore Infrastructure Area	The application relates to the allocated site NOR02. The site covers some 14.6 ha and comprises agricultural land. The outline application seeks planning permission for the erection of up to 400 dwellings, associated open space, landscaping and infrastructure works on the land. Location: Cornborough Road/Westward Ho!			Yes
1/0523/2021/REMM	Permitted	Adjacent to the Order Limits	This proposal is situated within the Development Plan Allocation BID03. The reserved matters application includes 225 homes and associated infrastructure and public open space. The principal highways access will be provided off Manteo Way. A secondary highways access will be provided off Alverdiscott Road, just east of Kingsley House. New public open space will also be provided including: • Local Area of Play 150 m^2 in area. • Local Equipped Area of Play 400 m^2 in area. • 1 km fitness trail circuit and fixed gym equipment together totalling 2,500 m^2 in area. • Amenity space. Location: Manteo Way			Yes
1/0110/2023/REMM	Permitted	0.3 km from Order Limits	Application for approval of Reserved Matters pursuant to 1/0947/2020/OUTM (layout, scale, appearance, and landscaping) for 200 dwellings and associated infrastructure. Location: Clovelly Road/A39			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
1/0656/2020/OUTM	Permitted	0.7 km from the Onshore Infrastructure Area	The application includes up to 211 dwellings, circa 3.2 ha of employment uses, public open space and associated infrastructure highways, footpaths and drainage. Location: Clovelly Road/A39			Yes
1/0880/2021/FULM	Permitted	0.5 km from the Order Limits	Erection of 117 dwellings and associated works including site access. The application site covers an area of 4.9 ha and includes the erection of 117 dwellings and associated works including site access. Location: Westward Ho!			Yes
1/0787/2018/FULM	Permitted	0.4 km from the Onshore Infrastructure Area	The site is located on Gammaton Road, East the Water, Bideford and is approximately 1.1 ha. The application includes the demolition of a warehouse (approved by planning application 1/0406/2018/DEM) and replacing it with a new office and conference centre (class B1 business), a gym and nursery. The proposed works would also include car parking and associated landscaping. Location: East the Water			Yes
1/0410/2022/FULM	Permitted	0.3 km from the Order Limits	Semi-developed land at the end of Mines Road off Manteo Way. Land associated with application ref: 1/0327/2008/FUL and later 1/0233/2012/EXTM. 12 dwellings with parking. Location: Manteo Way			Yes
1/0682/2021/FULM	Under construction	0.7 km from the Onshore Infrastructure Area	Reserved Matters (appearance, landscaping, layout and scale) application pursuant to 1/1084/2015/OUTM application for 145 dwellings, with associated public open space, play areas, landscaping and access from Cornborough Road			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			following demolition of 2 existing dwellings (additional information). Location: Westward Ho!			
1/0926/2020/OUTM	Permitted	0.4 km from the Order Limits	Outline planning application for the erection of up to 290 dwellings, including affordable housing with public open space, landscaping and sustainable drainage system (SuDS) and two vehicular access points from Abbotsham Road. All matters reserved except access. Location: A39			Yes
1/0894/2021/FULM	Permitted	0.2 km from the Order Limits	Reserved matters application for appearance, access, landscaping, layout & scale pursuant to planning approval 1/0111/2016/OUTM for the erection of 26 residential dwellings, associated infrastructure and open space. Location: Manteo Way			Yes
1/0380/2024/LA	Pending	0.2 km from the Onshore Infrastructure Area	Application includes a proposed Operational Services Centre as a hub for Council vehicles and services, comprising: • Vehicle maintenance workshop, welfare and office building • Vehicle yard and parking areas for Council vehicles and staff • Storage facilities for equipment and new waste containers • Green waste bays • Vehicle wash down area • Refuelling point • Two vehicular accesses off Alverdiscott Road			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			• Combined cycleway and pedestrian footway along Alverdiscott • Road frontage • Drainage attenuation pond and associated infrastructure • Landscaping • Educational resources • Public access to recreational link.			
Tier 3						
Alverdiscott Substation Connection Development	N/A	Within the Onshore Infrastructure Area	The development required at the existing Alverdiscott Substation Site, which is envisaged to include development of a new 400 kV substation, and other extension modification works to be carried out by National Grid Electricity Transmission. This does not form part of the Proposed Development, however, it is considered cumulatively within the Environmental Impact Assessment as it is necessary to facilitate connection to the national grid. It is anticipated that NGET would utilise the existing land holding to build the 400kV substation to accommodate the connection to the transmission network. It is assumed that the maximum development area for the Alverdiscott Substation Connection Development could comprise up to 3.8 ha of land. Within that area it is assumed that the substation itself will occupy a footprint of approximately 2.8 ha, with a maximum height of 15m, excluding connecting tower structures. It should also be noted that the existing 400kV side of			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			the substation is approximately 1 ha and would be incorporated into the above totals.			
Policy BID04	N/A	Adjacent to the Onshore Infrastructure Area	A site of about 34 hectares south of East-the-Water, as defined on the Policies Map 2, is allocated to deliver a sustainable, high quality mixed use development that includes: (a) approximately 600 dwellings, providing a mix of housing types and size to reflect local need, including affordable housing, of which approximately 430 are expected to be delivered in the plan period; (b) a 420 place primary school, including a nursery and a children's centre delivery base; (c) a hill top park; and (d) strategic planting along the site's southern and eastern boundaries.			Yes
Policy BID01	N/A	Adjacent to the Onshore Infrastructure Area	A site of about 71 hectares West of Bideford, between Abbotsham Road and Clovelly Road, as defined on Policies Map 2, is allocated to deliver a sustainable, high quality mixed use development that will be developed in a comprehensive manner and includes: a. approximately 1,050 dwellings, providing a mix of housing types b. a mix of commercial and employment uses on about 5 hectares at Atlantic Park c. integrated social and community infrastructure, including a 420 place primary school with early years provision and a children's centre delivery base, with associated sports and play facilities and			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			a mixed-use local centre providing a range of facilities.			
Policy BID02	N/A	Adjacent to Order Limits.	Land at Cleave Wood, extending to about 13 hectares and as defined on Policies Map 2, is allocated as a mixed use development that includes: (a) approximately 250 dwellings including affordable homes, with an emphasis on providing a mix of housing types and sizes that reflects local needs; (b) health care facilities, including related car parking on a site of about 0.6 hectares; and (c) a neighbourhood community centre, including a Children's Centre base and satellite youth facilities.			Yes
Policy BID03	N/A	0.0	Land adjoining Manteo Way, extending to 17 hectares, as defined on Policies Map 2, is allocated for residential and associated development, that includes: (a) approximately 310 dwellings, providing a mix of housing types and size to reflect local need, including affordable housing; and (b) a 2.5 hectare site for open space and recreation facilities.			No
Policy BID05	N/A	0.7 from Onshore Infrastructure Area	Land adjoining Caddsdown Business Park, extending to about 18 hectares and as defined on Policies Map 2, will be developed comprehensively to deliver a sustainable, high quality mixed use development that includes: (a) approximately 8 hectares of land for economic development focused on BI, B2 and B8 uses as			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			appropriate to the site and its wider context, ensuring that there is a mix of unit sizes to enable business start up and expansion; (b) approximately 130 dwellings, including affordable homes, with an emphasis on providing a mix of housing types and sizes that reflects local needs; and (c) an integrated highway network that incorporates: (i) the formation of a new east-west aligned vehicular link, as part of a wider distributor road through BID09 and extending to the site's eastern boundary; (ii) the provision of an extended spinal estate road for Caddsdown Business Park to service the new economic development; and (iii) the formation of a new junction onto Clovelly Road, providing access to the site from its north-eastern boundary.			
Policy BID09	N/A	Adjacent to the Onshore Infrastructure Area	Land at Adjavin Farm, south of Clovelly Road, extending to 41 hectares and as defined on Policies Map 2, is allocated for residential and associated development, that includes:(a) approximately 700 dwellings including affordable homes, with an emphasis on providing a mix of housing types and sizes that reflects local needs; (b) integrated social and community infrastructure, including a neighbourhood community centre; (c) on site provision of sport and recreation facilities, including sports pitches adjoining Clovelly Road/Atlantic Village;			Yes

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			(d) a vehicular link forming part of a wider distributor link to the south of Clovelly Road connecting with the Caddsdown Industrial Park Extension, allocated by Policy BID05; and (e) strategic planting along the site's southern boundary and western boundaries			
Policy BID10	N/A	0.9 km from Order Limits	Land at Clovelly Road Industrial Estate, extending to approximately 1.2 hectares as defined on Policies Map 2, is allocated for economic development. The site will be developed in accordance with the following site specific development principle: (a) vehicular access to be provided from the Clovelly Road Industrial Estate Road.			No
Policy ABS01	N/A	0.1 km from Onshore Infrastructure Area	Policy ABS01: Land at The Glebe Land at the Glebe, as shown on Policies Map 27, is allocated for residential development that includes: (a) approximately 23 dwellings, including affordable homes, with a focus on providing a mix of housing types and sizes to reflect local need.			Yes
Policy NOR01	N/A	0.6 km from Order Limits	A site of about 32 hectares at Daddon Hill, as defined on Policies Map 8A, is allocated to deliver a sustainable, high quality mixed use development that includes: (a) approximately 500 dwellings, providing a mix of housing types and size to reflect local need, including affordable housing and an Extra Care facility; (b) a 420 place primary school with an associated nursery and children's centre delivery base, located			No

Project	Status	Distance from Proposed Development (nearest point, km)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
			to maximise accessibility to the resident catchment; and (c) a neighbourhood community centre.			
Policy NOR02	N/A	0.4 km from Order Limits	Site West of Buckleigh Road Land to the west of Buckleigh Road, extending to about 30 hectares and as defined on Policies Map 8A, will be comprehensively planned to deliver a sustainable, high quality mixed use development that includes: (a) approximately 740dwellings, providing a mix of housing type and size to reflect local need, including those of the area's elderly population and affordable housing; and (b) a local centre, including facilities to accommodate community and retail uses			No

Scope of Cumulative Effects Assessment

1.13.6 The cumulative effects presented and assessed in this section have been based on the Project Design Envelope set out in Volume 1, Chapter 5: Project Description of the ES as well as the information available on other projects and plans. The maximum design scenario as described for the Proposed Development (see **Table 1.15**) has been assessed cumulatively with the projects/plans listed in **Table 1.16**.

1.13.7 The CEA has considered the Proposed Development, alongside the NGET substation to be developed at the existing Alverdiscott Substation Site. The assessed design of NGET substation has been based upon a combination of reasonable maximum design scenario parameters, as detailed within Volume 1, Chapter 3: Project Description of the ES. The development area for the NGET substation would comprise up to 3.8 ha of land. Within that area it is assumed that the substation itself will occupy a footprint of approximately 2.8 ha, with a maximum height of 15 m, excluding connecting tower structures. If further information is available for the proposal before the Proposed Development receives development consent, the Applicant will review the information and provide any update needed to the CEA.

1.13.8 In relation to Ecology and Nature Conservation, this assessment considers 17 Tier 1 developments and 11 Tier 3 developments. No Tier 2 developments were identified.

Cumulative Effects Assessment

1.13.9 A description of the significance of cumulative effects upon onshore ecology and nature conservation receptors arising from construction, operation and maintenance and decommissioning is given below.

Construction - Tier 1 Projects

1.13.10 The majority of developments considered in **Table 1.16** have been permitted, with the exception of 1/1266/2022/REMM, 1/0110/2023/REMM (which are amendments to existing permitted designs) and 1/0380/2024/LA (which is for development of a commercial property). As such, their impacts on statutory designated sites and locally designated sites will have been considered and addressed during the planning application process. The cumulative effect of the Proposed Development with these other designations should not result in a significant increase in effects.

1.13.11 Where IEFs such as populations of wintering and migratory birds associated with the Taw Torridge Estuary SSSI are concerned, there is rather limited value in the habitats on which the developments are sited for particular use by birds, as most are adjacent to existing built-up areas.

1.13.12 Cumulative effects on Devon hedges are unlikely to be substantial as hedgerows are now considered under BNG assessment, and Proposed Development mitigation and enhancement also considers this (see Volume 2, Figure 1.4 of the ES).

1.13.13 Streams with wooded banks do not appear to be affected by the developments considered other than the Proposed Development. Therefore, there are unlikely to be an increase in cumulative impacts.

1.13.14 The developments considered for cumulative effects will result in some permanent loss of grassland and arable cropland, as will the construction of the Converter Site. This loss would result in an increased significance of effect on these habitats of Moderate Adverse in combination. Effects on semi-improved grassland have not been considered, as these are only affected by temporary loss within the Proposed Development.

1.13.15 Protected and notable species which are not particularly mobile, such as dormice, reptiles, and aquatic invertebrates, are less likely to be subject to cumulative effects than effects as a direct result of a proposed development on their current habitat and range. As measures will be required in all approved developments to provide appropriate levels of mitigation for these species, it is unlikely that significant increases in cumulative impacts would occur.

1.13.16 For protected and notable species which are more mobile, such as otters, bats and birds, there is potentially an increase in cumulative effects, where multiple development sites across a given species' range may erode the viability of the landscape for that species. Looking at these species in turn, there is unlikely to be any significant increase in cumulative impacts on otters, as none of the developments considered appear to occur in areas likely to support otters.

1.13.17 For bats, the picture is slightly less clear, particularly when considering the more permanent impacts associated with construction of the Converter Site. The presence of most of the housing developments adjacent to existing built up areas is unlikely to have significant additional effects on light sensitive bat species, as these would tend not to utilise these areas. The increase in habitat modification at the Converter Site, in combination with 1/1057/2021/FULM (solar array) in **Table 1.16** could have some increased disturbance during construction. However, this is unlikely to increase the significance of effect from the Moderate Adverse category at which we have assessed impacts on bats.

1.13.18 In respect of birds, the permanent habitat loss associated with the developments considered may result in an increased loss of suitable habitat for nesting during the construction period, which could increase the significance of effect for this group from Minor Adverse to Moderate Adverse, where construction programmes overlap. As stated above, an increase in cumulative effects on wintering and migratory birds is unlikely as the habitats affected by the developments considered do not seem to be likely to support significant populations of these groups.

Statutory Designated Sites

1.13.19 While impacts on statutory designated sites will have been considered within individual planning applications for all permitted developments, cumulative effects may not have been fully considered. Of principle interest, based on proximity to the majority of the Tier 1 developments and its sensitivity, is the Taw/Torridge Estuary SSSI. Cumulative impacts should not occur in regard to increased direct contamination entering the estuary from construction activities, or from increased or modified water flows. The risk of increased effects on areas of potential value to birds forming parts of populations for which the SSSI was designated appears to be limited, primarily due to the proximity of most of the Tier 1 developments to existing built-up areas.

1.13.20 Cumulative impacts on other statutory designated sites such as the Kynoch's Foreshore LNR are also unlikely to increase over those assessed for the Proposed Development alone, as none of the developments being considered appear to have a clear contamination pathway to the Torridge Estuary in a location which would flow into that area of the estuary. The assessment carried out for the Proposed Development in isolation would be unchanged in relation to statutory designated sites.

1.13.21 Potential for the Tier 1 developments to have impacts on Mermaids Pool to Rowden Gut SSSI are also unlikely to significantly increase the effects on this geological SSSI over that assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.22 The sensitivity of statutory designated sites in locations which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **High/National**.

Magnitude of Impact

1.13.23 The impact is predicted to be of local spatial extent and short term duration. The magnitude would therefore be **low adverse**.

Significance of the Effect

1.13.24 Overall, the sensitivity of the receptor is High/National and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Locally Designated Sites

1.13.25 A number of locally designated sites occur in the vicinity of the Tier 1 developments identified. No locally designated site occurs immediately adjacent to both the Proposed Development and other developments identified. Standard construction good practice should prevent general construction contamination issues through air or water-borne contaminants during construction of all developments. Where locally designated sites have specific populations of species of nature conservation interest, measures will have been incorporated into the individual schemes to ensure that these populations are protected and their habitats enhanced.

Sensitivity of the Receptor

1.13.26 The sensitivity of locally designated sites in locations which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/County**.

Magnitude of Impact

1.13.27 The impact is predicted to be of local spatial extent and short term duration. The magnitude would therefore be **low adverse**.

Significance of the Effect

1.13.28 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Hedgerows

1.13.29 A number of the Tier 1 developments are likely to have impacts on Devon hedgerows including removal and encroachment. However, measures such as BNG will ensure that there is a net gain in hedgerow (either in quality of retained hedges or increased lengths of new hedgerow) resulting from the developments which have recently received approval or have yet to be approved.

1.13.30 Impacts on hedgerows relating to wildlife utilising them (which is their primary ecological value) is assessed below in relation to the identified protected species, although it is acknowledged that hedgerows do provide value to a number of species which are not specifically protected.

Sensitivity of the Receptor

1.13.31 The sensitivity of Devon hedgerows in locations which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/County**.

Magnitude of Impact

1.13.32 The impact is predicted to be of local spatial extent and long term duration (taking into account the time required for reinstated and newly created hedgerows to re-establish). The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.33 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is medium. The effect would, therefore, be of **Moderate Adverse** significance, which is significant.

Watercourses with Wooded Banks

1.13.34 The Tier 1 developments considered do not appear to be located in close proximity to habitats of this type, therefore no additional cumulative effects have been identified.

Sensitivity of the Receptor

1.13.35 The sensitivity of watercourses with wooded banks which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/County**.

Magnitude of Impact

1.13.36 The impact is predicted to be of local spatial extent and medium to long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.37 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Semi-Improved Grassland

1.13.38 The Tier 1 developments identified may result in small temporary losses of semi-improved grassland which are likely to be replaced and enhanced as part of landscape design and BNG requirements (where these are mandated). When taken in consideration of the temporary effects on this habitat which will occur as a result of construction of the Proposed Development, the additional temporary cumulative losses are unlikely to result in an increase in level of impact over that assessed for the Proposed Development alone.

Sensitivity of the Receptor

1.13.39 The sensitivity of semi-improved grasslands which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Low/District**.

Magnitude of Impact

1.13.40 The impact is predicted to be of local spatial extent and medium term duration. The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.41 Overall, the sensitivity of the receptor is Low/District and the magnitude of the impact is medium. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Improved Grasslands

1.13.42 The construction of the Tier 1 developments identified will result in permanent removal of areas of agriculturally-improved grassland and grass leys. However this habitat is widespread, easily replicated and of limited value to wildlife, and this loss would not result in additional in-combination impacts when considered with the Proposed Development.

Sensitivity of the Receptor

1.13.43 The sensitivity of improved grassland and grass leys which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Negligible/Parish**.

Magnitude of Impact

1.13.44 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **High adverse**.

Significance of the Effect

1.13.45 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Arable Cropland

1.13.46 The Tier 1 developments identified are likely to result in permanent loss of areas of this habitat, which is widespread and very easily replicated. It is of limited value as a nature conservation receptor. This loss would not result in additional cumulative impacts when considered with the Proposed Development.

Sensitivity of the Receptor

1.13.47 The sensitivity of arable cropland which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Negligible/Parish**.

Magnitude of Impact

1.13.48 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **High adverse**.

Significance of the Effect

1.13.49 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Dormice

1.13.50 Due to the locations of the Tier 1 developments considered, it is not clear that the hedgerows and woodland habitats that they may affect are likely to support dormice as a result of their proximity to existing urban areas. As a result, cumulative impacts for dormice are unchanged from those identified for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.51 The sensitivity of dormice which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.52 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.53 Overall, the sensitivity of the receptor is medium/regional and the magnitude of the impact is medium. The effect would, therefore, be of **Moderate Adverse** significance, which is significant.

Otters

1.13.54 The Tier 1 developments do not appear to be located in places where littoral habitats likely to be utilised by otters occur. While there is some potential for additional effects on watercourses as a result of construction contamination events, normal construction good practice should prevent this. As a result, no additional cumulative impacts have been assessed over those identified for the Proposed Development alone.

Sensitivity of the Receptor

1.13.55 The sensitivity of otters which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.56 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.57 Overall, the sensitivity of the receptor is medium/regional and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Bats

1.13.58 The Tier 1 developments identified are likely to result in increasingly urbanised areas which may be less favoured by light-sensitive bat species. The removal of hedgerows used as foraging and flight lines and potentially trees used for roosting associated with the Tier 1 developments and the impacts identified for the Proposed Development could result in an increase in detrimental impacts on bats, particularly those species which are light-averse (which tend to be the rarer woodland species).

1.13.59 As a result of this, there is likely to be some cumulative increase in the magnitude of impact on bats across the district, over that assessed for the Proposed Development in isolation. This increase in magnitude of impacts is not assessed to be sufficiently large to be identified as high adverse, and has been assessed as medium.

Sensitivity of the Receptor

1.13.60 The sensitivity of bats which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.61 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.62 Overall, the sensitivity of the receptor is medium/regional and the magnitude of the impact is medium. The effect would, therefore, be of **Moderate Adverse** significance, which is significant.

Badgers

1.13.63 The Tier 1 developments may have some limited effects on badgers and their setts, although the number of setts and social groups affected would seem to be limited, given the low numbers of badgers encountered during surveys for the Proposed development (and thought to be related to licensed culling operations for Bovine TB).

1.13.64 However, if badgers are affected by Tier 1 developments, appropriate mitigation measures to ensure that their welfare is protected will be incorporated within the design and it is therefore unlikely that cumulative impacts on badgers will change over that assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.65 The sensitivity of badgers which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Negligible/Parish**.

Magnitude of Impact

1.13.66 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be up to **Low adverse**.

Significance of the Effect

1.13.67 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of up to **Minor Adverse** significance, which is not significant.

Breeding Birds

1.13.68 The Tier 1 developments identified could result in loss of significant areas of habitat of use by common breeding birds, particularly hedgerows and scrub habitats. In addition, increasingly urbanised areas with increased human activity are likely to prove less attractive to some species of breeding birds, even where suitable habitats are provided.

Sensitivity of the Receptor

1.13.69 The sensitivity of breeding birds which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/County**.

Magnitude of Impact

1.13.70 The impact is predicted to be of local spatial extent and long term duration. Taking into consideration the increased urban area, the magnitude would therefore be **low adverse**.

Significance of the Effect

1.13.71 Overall, the sensitivity of the receptor is medium county and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Wintering and Migratory Birds

1.13.72 The locations of the Tier 1 developments considered would appear to be unlikely to be particularly favourable to wintering and migratory birds which are primarily associated with the coastland and estuary features. Locations adjacent to existing urban development mean that even where habitats suitable for high tide roosting or foraging are present in these developments, they are unlikely to be significantly utilised by wintering and migratory bird species.

1.13.73 The cumulative impacts assessed for wintering and migratory birds is therefore not changed from that assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.74 The sensitivity of wintering and migratory birds which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/County.**

Magnitude of Impact

1.13.75 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.76 Overall, the sensitivity of the receptor is medium/county and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Reptiles

1.13.77 The Tier 1 developments considered appear to occupy habitats similar to those identified across the majority of the Proposed Development. As such opportunities for reptiles are likely to be similar to those identified for the Proposed Development, i.e. small populations of common reptiles in isolated locations associated with particular habitat features and favourable topographical locations, such as sheltered south facing slopes.

1.13.78 The Tier 1 developments do not seem to be in locations suggesting particularly strong reptile populations would be present. Where reptiles are present, appropriate mitigation measures would have been incorporated into the scheme designs of these developments.

1.13.79 Therefore the cumulative impacts assessed for reptiles do not increase over those assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.80 The sensitivity of reptiles which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Low/District**.

Magnitude of Impact

1.13.81 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **medium adverse**.

Significance of the Effect

1.13.82 Overall, the sensitivity of the receptor is Low/District and the magnitude of the impact is medium. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Fish

1.13.83 The Tier 1 developments considered do not appear to be in locations which predispose them to have significant impacts on water courses supporting fish populations. Normal construction good practice should ensure that no contamination incidents occur to drainages which could form a pathway into the important tributaries to the Torridge Estuary, which forms a migration route and potential spawning grounds for important migratory species.

1.13.84 As a result the cumulative impacts on fish are assessed to remain as identified for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.85 The sensitivity of fish which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.86 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.87 Overall, the sensitivity of the receptor is Medium/Regional and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Aquatic Invertebrates

1.13.88 The Tier 1 developments considered do not appear to be in locations which predispose them to have significant impacts on water courses supporting aquatic invertebrate populations. Normal construction good practice should ensure that no contamination incidents occur to drainages which could form a

pathway into the water courses and important tributaries to the Torridge Estuary, which support populations of aquatic invertebrates.

1.13.89 As a result the cumulative impacts on aquatic invertebrates are assessed to remain as identified for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.90 The sensitivity of aquatic invertebrates which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Low/District**.

Magnitude of Impact

1.13.91 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.92 Overall, the sensitivity of the receptor is Low/District and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Construction - Tier 3 Projects

1.13.93 The Tier 3 projects considered in this assessment relate to a number of sites identified for development in local policies.

1.13.94 While no specific applications have been made, should developments relating to these policies be enacted, they would result in further losses of typical agricultural land, typical of the type affected by the Proposed Development.

1.13.95 Effects would be similar to those identified for Tier 1 projects. In particular, permanent habitat losses associated with the proposed schemes may have some effects on more mobile species, although the locations again would appear not to be particularly favourable for species such as light-sensitive bats or otters, for example, due to proximity to existing developed areas.

1.13.96 The extent to which habitat creation or enhancement associated with required BNG in the future are also likely to reduce the in-combination impacts of these projects.

1.13.97 Locations of the Tier 3 projects are largely in closer proximity to the Onshore HVDC Cable Corridor of the Proposed Development, which will offer temporary effects in terms of habitat loss and construction disturbance effects.

1.13.98 As a consequence of these considerations, the cumulative effects associated with construction of the Tier 3 projects are unlikely to result in any significant increase in impacts when considered in combination with the Proposed Development.

Statutory Designated Sites

1.13.99 While impacts on statutory designated sites will have been considered within individual planning applications for all permitted developments, in combination effects may not have been fully considered. Of principle interest, based on proximity to the majority of the Tier 3 developments and its sensitivity, is the

Taw/Torridge Estuary SSSI. Cumulative impacts should not occur in regard to increased direct contamination entering the estuary from construction activities, or from increased or modified water flows. The risk of increased effects on areas of potential value to birds forming parts of populations for which the SSSI was designated appears to be limited, primarily due to the proximity of most of the Tier 1 developments to existing built-up areas.

1.13.100 Cumulative impacts on other statutory designated sites such as the Kynoch's Foreshore LNR are also unlikely to increase over those assessed for the Proposed Development alone, as none of the developments being considered appear to have a clear contamination pathway to the Torridge Estuary in a location which would flow into that area of the estuary. The assessment carried out for the Proposed Development in isolation would be unchanged in relation to statutory designated sites.

1.13.101 Potential for the Tier 1 developments to have impacts on Mermaids Pool to Rowden Gut SSSI are also unlikely to significantly increase the effects on this geological SSSI over that assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.102 The sensitivity of statutory designated sites in locations which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **High/National**.

Magnitude of Impact

1.13.103 The impact is predicted to be of local spatial extent and short term duration. The magnitude would therefore be **low adverse**.

Significance of the Effect

1.13.104 Overall, the sensitivity of the receptor is High/National and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Locally Designated Sites

1.13.105 A number of locally designated sites occur in the vicinity of the Tier 3 developments identified. No locally designated site occurs immediately adjacent to both the Proposed Development and other developments identified. Standard construction good practice should prevent general construction contamination issues through air or water-borne contaminants during construction of all developments. Where locally designated sites have specific populations of species of nature conservation interest, measures will have been incorporated into the individual schemes to ensure that these populations are protected and their habitats enhanced.

Sensitivity of the Receptor

1.13.106 The sensitivity of locally designated sites in locations which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Medium/County**.

Magnitude of Impact

1.13.107 The impact is predicted to be of local spatial extent and short term duration. The magnitude would therefore be **low adverse**.

Significance of the Effect

1.13.108 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Hedgerows

1.13.109 A number of the Tier 3 developments are likely to have impacts on Devon hedgerows including removal and encroachment. However, measures such as BNG will ensure that there is a net gain in hedgerow (either in quality of retained hedges or increased lengths of new hedgerow) resulting from the developments which have recently received approval or have yet to be approved.

1.13.110 Impacts on hedgerows relating to wildlife utilising them (which is their primary ecological value) is assessed below in relation to "protected species", although it is acknowledged that hedgerows do provide value to a number of species which are not specifically protected.

Sensitivity of the Receptor

1.13.111 The sensitivity of Devon hedgerows in locations which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/County**.

Magnitude of Impact

1.13.112 The impact is predicted to be of local spatial extent and long term duration (taking into account the time required for reinstated and newly created hedgerows to re-establish). The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.113 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is medium. The effect would, therefore, be of **Moderate Adverse** significance, which is significant.

Watercourses with Wooded Banks

1.13.114 The Tier 3 developments considered do not appear to be located in close proximity to habitats of this type, therefore no additional in-combination effects have been identified.

Sensitivity of the Receptor

1.13.115 The sensitivity of water courses with wooded banks which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Medium/County**.

Magnitude of Impact

1.13.116 The impact is predicted to be of local spatial extent and medium to long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.117 Overall, the sensitivity of the receptor is Medium/County and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Semi-Improved Grassland

1.13.118 The Tier 3 developments identified may result in small temporary losses of semi-improved grassland which are likely to be replaced and enhanced as part of landscape design and BNG requirements (where these are mandated). When taken in consideration of the temporary effects on this habitat which will occur as a result of construction of the Proposed Development, the additional temporary cumulative losses are unlikely to result in an increase in level of impact over that assessed for the Proposed Development alone.

Sensitivity of the Receptor

1.13.119 The sensitivity of semi-improved grasslands which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Low/District**.

Magnitude of Impact

1.13.120 The impact is predicted to be of local spatial extent and medium term duration. The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.121 Overall, the sensitivity of the receptor is Low/District and the magnitude of the impact is medium. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Improved Grasslands

1.13.122 The construction of the Tier 3 developments identified will result in permanent removal of areas of agriculturally-improved grassland and grass leys. However this habitat is widespread, easily replicated and of limited value to wildlife, and this loss would not result in additional in-combination impacts when considered with the Proposed Development.

Sensitivity of the Receptor

1.13.123 The sensitivity of improved grassland and grass leys which could be affected by the cumulative effects of the Proposed Development and the Tier 1 developments listed is **Negligible/Parish**.

Magnitude of Impact

1.13.124 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **High adverse**.

Significance of the Effect

1.13.125 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Arable Cropland

1.13.126 The Tier 3 developments identified are likely to result in permanent loss of areas of this habitat, which is widespread and very easily replicated. It is of limited value as a nature conservation receptor. This loss would not result in additional in-combination impacts when considered with the Proposed Development.

Sensitivity of the Receptor

1.13.127 The sensitivity of arable cropland which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Negligible/Parish**.

Magnitude of Impact

1.13.128 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **High adverse**.

Significance of the Effect

1.13.129 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Dormice

1.13.130 Due to the locations of the Tier 3 developments considered, it is not clear that the hedgerows and woodland habitats that they may affect are likely to support dormice as a result of their proximity to existing urban areas. As a result to cumulative impacts for dormice are unchanged from those identified for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.131 The sensitivity of dormice which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.132 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.133 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Moderate Adverse** significance, which is significant.

Otters

1.13.134 The Tier 1 developments do not appear to be located in places where littoral habitats likely to be utilised by otters occur. While there is some potential for additional effects on water courses as a result of construction contamination events, normal construction good practice should prevent this. As a result, no additional cumulative impacts have been assessed over those identified for the Proposed Development alone.

Sensitivity of the Receptor

1.13.135 The sensitivity of otters which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.136 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.137 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Bats

1.13.138 The Tier 3 developments identified are likely to result in increasingly urbanised areas which may be less favoured by light-sensitive bat species. Combined with the removal of hedgerows used as foraging and flight lines and potentially trees used for roosting associated with the Tier 3 developments and the impacts identified for the Proposed Development could result in an increase in detrimental impacts on bats, particularly those species which are light-averse (which tend to be the rarer woodland species).

1.13.139 As a result of this, there is likely to be some cumulative increase in the magnitude of impact on bats across the district, over that assessed for the Proposed Development in isolation. This increase in magnitude of impacts is not assessed to be sufficiently large to be identified as high adverse, and so remains assessed as medium.

Sensitivity of the Receptor

1.13.140 The sensitivity of bats which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.141 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **h adverse**.

Significance of the Effect

1.13.142 Overall, the sensitivity of the receptor is Medium/Regional and the magnitude of the impact is medium. The effect would, therefore, be of **Moderate Adverse** significance, which is significant.

Badgers

1.13.143 The Tier 3 developments may have some limited effects on badgers and their setts, although the number of setts and social groups affected would seem to be limited, given the low numbers of badgers encountered during surveys for the Proposed development (and thought to be related to licensed culling operations for Bovine TB).

1.13.144 However, if badgers are affected by Tier 3 developments appropriate mitigation measures to ensure that their welfare is protected will be incorporated within the design and it is therefore unlikely that cumulative impacts on badgers will change over that assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.145 The sensitivity of badgers which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Negligible/Parish**.

Magnitude of Impact

1.13.146 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.147 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Breeding Birds

1.13.148 The Tier 3 developments identified could result in loss of significant areas of habitat of use by common breeding birds, particularly hedgerows and scrub habitats. In addition, increasingly urbanised areas with increased human activity are likely to prove less attractive to some species of breeding birds, even where suitable habitats are provided.

1.13.149 The in combination effects of this when considered with the impacts assessed for the Proposed Development will result in an increased magnitude of impact over that identified for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.150 The sensitivity of breeding birds which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Medium/County**.

Magnitude of Impact

1.13.151 The impact is predicted to be of local spatial extent and long term duration. Taking into consideration the increased urban area, the magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.152 Overall, the sensitivity of the receptor is Negligible/parish and the magnitude of the impact is high. The effect would, therefore, be of **Moderate Adverse** significance, which is significant.

Wintering and Migratory Birds

1.13.153 The locations of the Tier 3 developments considered would appear to be unlikely to be particularly favourable to wintering and migratory birds which are primarily associated with the coastland and estuary features. Locations adjacent to existing urban development mean that even where habitats suitable for high tide roosting or foraging are present in these developments, they are unlikely to be significantly utilised by wintering and migratory bird species.

1.13.154 The cumulative impacts assessed for wintering and migratory birds is therefore not changed from that assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.155 The sensitivity of wintering and migratory birds which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Medium/County.**

Magnitude of Impact

1.13.156 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.157 Overall, the sensitivity of the receptor is Medium/County. and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Reptiles

1.13.158 The Tier 3 developments considered appear to occupy habitats similar to those identified across the majority of the Proposed Development. As such opportunities for reptiles are likely to be similar to those identified for the Proposed Development, i.e. small populations of common reptiles in isolated

locations associated with particular habitat features and favourable topographical locations, such as sheltered south facing slopes.

1.13.159 The Tier 3 developments do not seem to be in locations suggesting particularly strong reptile populations would be present. Where reptiles are present, appropriate mitigation measures would have been incorporated into the scheme designs of these developments.

1.13.160 Therefore the cumulative impacts assessed for reptiles do not increase over those assessed for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.161 The sensitivity of reptiles which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Low/District**.

Magnitude of Impact

1.13.162 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Medium adverse**.

Significance of the Effect

1.13.163 Overall, the sensitivity of the receptor is Low/District. and the magnitude of the impact is medium. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Fish

1.13.164 The Tier 3 developments considered do not appear to be in locations which predispose them to have significant impacts on water courses supporting fish populations. Normal construction good practice should ensure that no contamination incidents occur to drainages which could form a pathway into the important tributaries to the Torridge Estuary, which forms a migration route and potential spawning grounds for important migratory species.

1.13.165 As a result the cumulative impacts on fish are assessed to remain as identified for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.166 The sensitivity of fish which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Medium/Regional**.

Magnitude of Impact

1.13.167 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.168 Overall, the sensitivity of the receptor is Medium/Regional and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Aquatic Invertebrates

1.13.169 The Tier 3 developments considered do not appear to be in locations which predispose them to have significant impacts on water courses supporting aquatic invertebrate populations. Normal construction good practice should ensure that no contamination incidents occur to drainages which could form a pathway into the water courses and important tributaries to the Torridge Estuary, which support populations of aquatic invertebrates.

1.13.170 As a result the cumulative impacts on aquatic invertebrates are assessed to remain as identified for the Proposed Development in isolation.

Sensitivity of the Receptor

1.13.171 The sensitivity of aquatic invertebrates which could be affected by the cumulative effects of the Proposed Development and the Tier 3 developments listed is **Low/District**.

Magnitude of Impact

1.13.172 The impact is predicted to be of local spatial extent and long term duration. The magnitude would therefore be **Low adverse**.

Significance of the Effect

1.13.173 Overall, the sensitivity of the receptor is Low/District and the magnitude of the impact is low. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Operation and Maintenance - Tier 1 Projects

1.13.174 No cumulative effects have been identified for the operational phase of the Proposed Development. This is because impacts relating to habitat loss and potential damage to habitats used by protected species have been assessed during the construction period.

1.13.175 Issues relating to operational disturbance to species are unlikely to be at the same levels as experienced during the construction period because, by completion of construction, species will be habituated and modified their behaviour, if necessary, to construction conditions and so will not have further negative effects. While there is some potential for slight beneficial effects because of the change from construction to operational phases, these are unlikely to be sufficient to be registered. In combination with the other developments being considered, the cumulative effects will not change from those assessed for the Proposed Development alone.

Operation and Maintenance - Tier 3 Projects

1.13.176 The Tier 3 projects considered in this assessment will be required to provide BNG as part of their scheme design. As the operational period progresses, the establishment of new and enhanced habitats which would result from successful implementation of BNG to these potential schemes should lead to increased abundance of habitats likely to be of value to wildlife.

1.13.177 Operational cumulative impacts in relation to these projects are not likely to be significant, although the loss of unlit agricultural land and potential loss of undisturbed hedgerows may have continued effects of reduction in quality of habitats for species such as light-averse bats and dormice. This will require amelioration within the relevant projects, although when the locations of these projects are considered, there is very limited scope for additional cumulative impacts when considering these in combination with the Proposed Development, as the locations lie closer to areas affected by the HVDC cabling route, rather than the Converter Site. The completion and reinstatement (and subsequent re-establishment) of hedgerows and habitats associated with the Proposed Development will mean that there are no additional impacts to consider.

1.13.178 Where any of these projects come forward during initial years of operation of the Proposed Development, prior to full establishment of habitat creation, enhancement and reinstatement, it would be important to note that there again might be some potential for effects on species such as light-sensitive bats and dormice, as a result of further habitat loss or disruption.

1.13.179 These effects, however, would not represent any increase in impact significance than has been identified for the construction phase of the Proposed Development.

Decommissioning - Tier 1 Projects

1.13.180 Cumulative effects in relation to decommissioning are not clear, as the scope and timing of decommissioning are currently unknown. It is also not clear what future developments will occur which could be considered for additional in combination effects.

1.13.181 Considering the list of other projects included in **Table 1.16** above, it is unlikely that cumulative effects from decommissioning would deviate from those assessed currently for the Proposed Development alone as they would be very unlikely to exceed the impacts identified for the construction phase of the Proposed Development.

Decommissioning - Tier 3 Projects

1.13.182 The Tier 3 projects assessed would also be unlikely to increase potential for cumulative impacts beyond those identified for the construction phase of the proposal.

1.14 Transboundary Effects

1.14.1 A screening of transboundary impacts has been carried out and has identified that there was no potential for significant transboundary effects with regard to onshore ecology and nature conservation from the Proposed Development upon the interests of other states.

1.15 Inter-related Effects

1.15.1 Inter-relationships are the impacts and associated effects of different aspects of the Proposed Development on the same receptor. These are as follows.

- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Proposed Development (construction, operation and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases.
- Receptor led effects: Assessment of the scope for all relevant effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor.

1.15.2 A description of the likely interactive effects arising from the Proposed Development on onshore ecology and nature conservation is provided in Volume 4, Chapter 5: Inter-related effects of the ES.

1.16 Summary of Impacts, Mitigation Measures and Monitoring

1.16.1 Information on onshore ecology and nature conservation within the study area was collected through desktop review, site surveys, and consultation.

1.16.2 **Table 1.17** presents a summary of the impacts, measures adopted as part of the Proposed Development and residual effects in respect to onshore ecology and nature conservation.

1.16.3 Overall, it is concluded that there will be the following significant effects arising from the Proposed Development during the construction, operation and maintenance or decommissioning phases.

- Moderate Adverse effect on hedgerows as a result of long-term temporary loss associated with the construction of the Onshore HVDC Cable Corridor, road widening activities and permanent loss associated with the construction of the Converter Site

1.16.4 **Table 1.18** presents a summary of the potential cumulative impacts and residual effects.

1.16.5 Overall, it is concluded that there will be the following additional significant cumulative effects from the Proposed Development alongside other projects/plans.

- Moderate Adverse effect on bats as a result of disturbance to light-sensitive bat species as a result of overlapping construction works associated with the Proposed Development and those developments considered in this section alongside tree removal, and permanent changes in the context of habitats following the construction of residential areas.
- There is the potential for a Moderate Adverse effect on dormice as a result of temporary and permanent hedgerow loss associated with the HVDC cable route, road widening activities and the Construction of the Converter Site alongside other developments in the vicinity of the site.

1.16.6 No potential transboundary impacts have been identified in regard to the effects of the Proposed Development.

Table 1.17: Summary of environmental effects

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Indirect effects on statutory designated sites as a result of contamination of water courses upstream of SSSI	✓	✓	✓	ONS06, ONS07, and ONS67 (**see Table 1.14**).	C: High/ National O: High/ National D: High/ National	C: Low adverse O: Negligible D: Low adverse	C: Minor Adverse O: Negligible D: Minor adverse	ONS48	C: Minor Adverse O: Negligible D: Minor adverse	Regular inspections including water quality sampling of watercourses downstream of HDD during construction/ decommissioning phases.
Indirect effects on non-statutory designated sites as a result of contamination of water courses and dust deposition or other contamination events	✓	✓	✓	ONS01, ONS02, ONS06, ONS07, and ONS94 (**see Table 1.14**).	C: Medium/ County O: Medium/ County D: Medium/ County	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	None Proposed	C: Minor adverse O: Negligible D: Minor adverse	Regular inspections including water quality sampling of watercourses downstream of HDD during construction/ decommissioning phases..
Permanent loss of hedgerows as a result of construction of Converter Site (primarily Devon hedges)	✓	✓	✓	ONS17 and ONS37 (**see Table 1.14**).	C: Medium/ County O: Medium/ County D: Medium/ County	C: Medium adverse O: Negligible D: Negligible	C: Moderate adverse O: Negligible D: Minor adverse	None Proposed	C: Moderate adverse O: Negligible D: Minor adverse	Monitor condition of new hedgerows as part of the implementation of the LEMP to ensure re-establishment of dense continuous canopy.
Potential temporary damage to watercourses with wooded banks as a result of construction of HVDC cable route.	✓	x	✓	ONS39, ONS02, ONS67, and ONS94 (**see Table 1.14**).	C: Medium/ County D: Medium/ County	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	ONS48	C: Minor adverse D: Minor adverse	Monitor of protection measures works during construction period to ensure compliance with measures implemented.

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Potential for disturbance to wildlife Potential for contamination										Water quality sampling of watercourses downstream of HDD
Temporary loss of semi-improved grassland as a result of HVDC cable route construction, including compounds	✓	x	✓	ONS42 (**see Table 1.14**).	C: Low/ District D: Low/ District	C: Medium adverse D: Low adverse	C: Minor adverse D: Negligible	None Proposed	C: Minor adverse D: Negligible	None
Temporary and permanent loss of improved grassland and arable leys as a result of construction of HVDC cable route and Converter Site	✓	x	✓	ONS42 (**see Table 1.14**).	C: Negligible/ Parish D: Negligible/ Parish	C: High adverse D: Low adverse	C: Minor adverse D: Negligible	None Proposed	C: Minor adverse D: Negligible	None
Temporary and permanent loss of arable cropland as a result of construction of HVDC cable route and Converter Site	✓	x	✓	ONS42 (**see Table 1.14**).	C: Negligible/ Parish D: Negligible/ Parish	C: High adverse D: Low adverse	C: Minor adverse D: Negligible	None Proposed	C: Minor adverse D: Negligible	None
Temporary and permanent damage to dormouse habitat (hedgerows) and potential disturbance to habitats adjacent to construction works as a result of construction of HVDC cable route, compounds, road widening and Converter Site.	✓	✓	✓	ONS41, ONS37, and ONS17 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Medium adverse O: Negligible D: Low adverse	C: Moderate adverse O: Negligible D: Minor adverse	ONS54 and ONS55.	C: Minor adverse O: Negligible D: Minor adverse	Monitoring of use of temporary bridges installed overnight during construction Monitoring of use of dead hedges as habitat connections (trail cameras prior to re-establishment of hedgerow canopy.

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
										Dormouse population monitoring (nest tubes/ footprint tunnels) in habitat areas within and adjoining the HVDC cable route for 5 years post construction
Potential disturbance to watercourses and littoral habitats used by otters during construction. Potential for contamination of water courses during construction.	✓	✓	✓	ONS02, ONS39, ONS43, ONS06, ONS07, ONS44, and ONS67 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	ONS86 and ONS56	C: Minor adverse O: Negligible D: Minor adverse	Pre-commencement surveys. Post completion survey to ensure no remaining impacts on potential otter habitats on completion of construction works.
Damage to hedgerows affecting foraging/ migration flight-lines. Possible requirement for the removal of trees with bat roost features/confirmed roosts. Potential indirect disturbance to bat roosts. Creation of replacement habitats and reinstatement of connectivity.	✓	✓	✓	ONS01, ONS37, ONS41, ONS58, ONS59, ONS66, ONS94 and ONS17 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Medium adverse O: Negligible beneficial D: Low adverse	C: Moderate adverse O: Negligible D: Minor adverse	ONS86, ONS48, and ONS63	C: Moderate adverse O: Negligible D: Minor adverse	Update surveys of all trees to be removed prior to commencement of construction to ensure no new roosts have been occupied. Monitoring bat mitigation bat boxes for evidence of use for 5 years post construction period.
Potential damage or disturbance to badger setts as a result of construction of	✓	✓	✓	ONS60 (**see Table 1.14**).	C: Negligible/ Parish	C: Low adverse (if	C: Minor adverse (if new	ONS47	C: Minor adverse (if	Pre-commencement surveys will be required and any

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
HVDC cable route, compounds, road widening and Converter Site. Potential for injury to individual animals as a result of falling into excavations or other mishaps within construction areas.					O: Negligible/ Parish D: Negligible/ Parish	new setts established) O: Negligible D: Low adverse	setts established) O: Negligible D: Negligible		new setts established) O: Negligible D: Negligible	further monitoring which may become required as a part of any licenced mitigation scheme.
Potential damage or disturbance to habitats used by breeding birds and reduction in available breeding habitat for duration of construction. Some permanent loss of breeding habitats as a result of construction of the Converter Site. Slight increase in breeding habitat availability as a result of habitat enhancements/ creation associated with reinstatement of HVDC cable route and landscape scheme for the Converter Site.	✓	✓	✓	ONS49, ONS50, and ONS61 (**see Table 1.14**).	C: Medium/ County O: Medium/ County D: Medium/ County	C: Low adverse O: Negligible beneficial D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	None Proposed	C: Minor adverse O: Negligible D: Minor adverse	None
Potential disturbance to areas used by wintering and migratory birds for high tide roosting and foraging as a result of construction of HVDC cable route (especially in areas adjacent to landfall site and Torridge Estuary crossing).	✓	✓	✓	ONS50 (**see Table 1.14**).	C: Medium/ County O: Medium/ County D: Medium/ County	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	None Proposed	C: Minor adverse O: Negligible D: Minor adverse	None
Potential temporary destruction of reptile habitat as a result of construction of HVDC cable	✓	✓	✓	ONS17 (**see Table 1.14**).	C: Low/ District	C: Low adverse	C: Minor adverse	ONS51	C: Minor adverse	Monitor newly-created habitats at Converter

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
route and Converter Site. Potential for injury to individual reptiles during construction Provision of potential reptile habitat in landscape scheme at Converter Site.					O: Low/ District D: Low/ District	O: Negligible D: Low adverse	O: Negligible D: Minor adverse		O: Negligible D: Minor adverse	Site for presence of reptiles
Possible contamination incidents as a result of construction activity adjacent to water courses affecting conditions for fish. HDD activities creating noise/vibration which could disturb migratory fish.	✓	✓	✓	ONS02, ONS07, ONS39 and ONS67 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	None Proposed.	C: Minor adverse O: Negligible D: Minor adverse	None
Possible contamination incidents as a result of construction activity adjacent to watercourses affecting conditions for aquatic invertebrates	✓	✓	✓	ONS02, ONS07, ONS39 and ONS67 (**see Table 1.14**).	C: Low/ District O: Low/ District D: Low/District	C: Low adverse O: Negligible D; Low adverse	C: Minor adverse O: Negligible D: Minor adverse	None Proposed.	C: Minor adverse O: Negligible D: Minor adverse	Monitor aquatic invertebrates upstream and downstream of HVDC cable crossing locations for 2 years after completion of construction.

Table 1.18: Summary of cumulative environmental effects

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Tier 1										
Indirect effects on statutory designated sites as a result of contamination of water courses upstream of SSSI. Potential effects on habitats of use to populations of birds associated with the SSSI. No additional in combination impacts identified.	✓	x	✓	ONS06, ONS07, and ONS67 (**see Table 1.14**).	C: High/ National D: High/ National	C: Low adverse D: Low adverse	C: Minor Adverse D: Minor adverse	ONS48	C: Minor Adverse D: Minor adverse	Regular inspections during construction/ decommissioning phases.
Indirect effects on non-statutory designated sites as a result of contamination of water courses and dust deposition or other contamination events. Potential for additional impacts present.	✓	x	✓	ONS01, ONS02, ONS06, ONS07, and ONS94 (**see Table 1.14**).	C: Medium/ County D: Medium/ County	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	None Proposed	C: Minor adverse D: Minor adverse	Regular inspections during construction/ decommissioning phases.
Permanent loss of Devon hedgerows as a result of construction of Converter Site in combination with minor hedgerow losses for other schemes considered	✓	x	x	ONS17 and ONS37 (**see Table 1.14**).	C: Medium/ County D: Medium/ County	C: Medium adverse D: Low adverse	C: Moderate adverse D: Minor adverse	None proposed.	C: Moderate adverse D: Minor adverse	Monitor condition of new hedgerows as part of the LEMP to ensure that they establish correctly.
Temporary potential damage to water courses with wooded banks as a result of construction of HVDC cable route. Potential for disturbance to wildlife using littoral habitats and potential	✓	x	✓	ONS39, ONS02, ONS67, and ONS94 (**see Table 1.14**).	C: Medium/ County D: Medium/ County	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	ONS48	C: Minor adverse D: Minor adverse	Monitor works during construction period to ensure compliance with measures implemented.

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
for construction contamination through water and air during construction period. No additional in combination impacts identified										
Temporary loss of semi-improved grassland as a result of HVDC cable route construction, including compounds. No additional in combination impacts identified	✓	x	✓	ONS42 (**see Table 1.14**).	C: Low/district D: Low/Local	C: Medium adverse D: Medium adverse	C: Minor adverse D: Minor adverse	None Proposed	C: Minor adverse D: Minor adverse	None
Temporary and permanent loss of improved grassland and arable leys as a result of construction of HVDC cable route and Converter Site. In combination there will be additional loss of this habitat.	✓	x	✓	ONS42 (**see Table 1.14**).	C: Negligible/ Parish D: Negligible/ Parish	C: High adverse D: High adverse	C: Minor adverse D: Minor adverse	None proposed	C: Moderate adverse D: Minor adverse	None
Temporary and permanent loss of arable cropland as a result of construction of HVDC cable route and Converter Site. In combination there may be additional loss of this habitat, although no significant change in residual effects on ecology and nature conservation are foreseen.	✓	x	✓	ONS42 (**see Table 1.14**).	C: Negligible/ Parish D: Negligible/ Parish	C: High adverse D: High adverse	C: Minor adverse D: Minor adverse	None proposed	C: Minor adverse D: Minor adverse	None

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Temporary and permanent damage to dormouse habitat (hedgerows) and potential disturbance to habitats adjacent to construction works as a result of construction of HVDC cable route, compounds, road widening and Converter Site. Potential increase in habitat availability/ connectivity as a result of mitigation planting during operation. No additional impacts on dormice considered likely as a result of the in-combination effects, due to locations of the schemes considered.	✓	x	✓	ONS41, ONS37, and ONS17 (**see Table 1.14**).	C: Medium/ Regional D: Medium/ Regional	C: Medium adverse D: Low adverse	C: Moderate adverse D: Minor adverse	ONS54 and ONS55.	C: Moderate adverse D: Minor adverse	Dormouse population monitoring in new/replaced habitat areas annually for 5 years post construction and again in years 7 and 10. Create temporary canopy connectivity during establishment with robustly constructed dead hedge
Potential disturbance to water-courses and littoral habitats used by otters during construction. Potential for contamination of water courses during construction. No additional impacts on otters considered likely as a result of the in-combination effects, due to locations of the schemes considered.	✓	x	✓	ONS02, ONS39, ONS43, ONS06, ONS07, ONS44, and ONS67 (**see Table 1.14**).	C: Medium/ Regional D: Medium/ Regional	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	ONS86 and ONS56	C: Minor adverse D: Minor adverse	Pre-commencement surveys. Post completion survey to ensure no remaining impacts on potential otter habitats on completion of construction works.
Damage to hedgerows used as foraging/ migration flight-lines by bats. Removal of	✓	x	✓	ONS01, ONS37, ONS41,	C: Medium/ Regional	C: Medium adverse	C: Moderate adverse D: Minor adverse	ONS01, ONS37, ONS41,	C: Moderate adverse	Update surveys of all trees to be removed prior to

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
small number of trees potentially supporting bat roosts. Potential disturbance to adjacent habitats potentially including bat roosts from construction works. Potential increase in habitat availability/ connectivity as a result of mitigation planting during operation. Potential in-combination increase in disturbance and loss of foraging habitat available for light-sensitive bats, primarily due to increased urbanisation from other schemes				ONS58, ONS59, ONS66, ONS94 and ONS17(**see Table 1.14**).	D: Medium/ Regional	D: Low adverse		ONS58, ONS59, ONS66, ONS94 and ONS17.	D: Minor adverse	commencement of construction to ensure no new roosts have been occupied. Monitoring bat mitigation bat boxes for evidence of use for 5 years post construction period.
Potential damage or disturbance to badger setts as a result of construction of HVDC cable route, compounds, road widening and Converter Site. Potential for injury to individual animals as a result of falling into excavations or other mishaps within construction areas. No additional impacts as a result of in combination effects expected due to general low levels of badger activity in the area.	✓	x	✓	ONS60 (**see Table 1.14**).	C: Negligible/ Parish D: Negligible/ Parish	C: Up to Low adverse (if new setts established) D: Medium adverse (if new setts found)	C: Up to minor adverse (if new setts established) D: Minor adverse (if new setts found)	ONS47	C: Minor adverse (if new setts established) D: Minor adverse (if new setts found)	Pre-commencement surveys will be required and any further monitoring which may become required as a part of any licenced mitigation scheme.

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Potential damage or disturbance to habitats used by breeding birds and reduction in available breeding habitat for duration of construction. Some permanent loss of breeding habitats as a result of construction of the Converter Site. Slight increase in breeding habitat availability as a result of habitat enhancements/ creation associated with reinstatement of HVDC cable route and landscape scheme for the Converter Site. In combination effects likely to increase pressure on potential nesting habitat for birds.	✓	x	✓	ONS49, ONS50, and ONS61 (**see Table 1.14**).	C: Medium/ County D: Medium/ County	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	None Proposed	C: Minor adverse D: Minor adverse	None
Potential disturbance to areas used by wintering and migratory birds for high tide roosting and foraging as a result of construction of HVDC cable route (especially in areas adjacent to landfall site and Torridge Estuary crossing). Due to location of schemes considered, additional in-combination effects considered unlikely.	✓	x	✓	ONS50 (**see Table 1.14**).	C: Medium/ County D: Medium/ County	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	None proposed	C: Minor adverse D: Minor adverse	None

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Potential temporary and possibly permanent destruction of reptile habitat as a result of construction of HVDC cable route and Converter Site. Potential for injury to individual reptiles as a result of construction work. Some increase in potential reptile habitat as a result of landscape design at Converter Site. Due to location of schemes considered, additional in-combination effects considered unlikely.	✓	x	✓	ONS17 (**see Table 1.14**).	C: Low/ District D: Low/ District	C: Medium adverse D: Medium adverse	C: Minor adverse D: Minor adverse	ONS51	C: Minor adverse D: Minor adverse	Monitor newly-created habitats at Converter Site for evidence of reptile take-up.
Possible contamination incidents as a result of construction activity adjacent to water courses affecting conditions for fish. Due to location of schemes considered, additional in-combination effects considered unlikely.	✓	x	✓	ONS02, ONS07, ONS39 and ONS67 (**see Table 1.14**).	C: Medium/ Regional D: Medium/ Regional	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	None proposed	C: Minor adverse D: Minor adverse	None
Possible contamination incidents as a result of construction activity adjacent to water courses affecting conditions for aquatic invertebrates. Due to location of schemes considered, additional in-	✓	x	✓	ONS02, ONS07, ONS39 and ONS67 (**see Table 1.14**).	C: Low/ District D: Low/ District	C: Low adverse D: Medium adverse	C: Minor adverse D: Minor adverse	None proposed	C: Minor adverse D: Minor adverse	Monitor aquatic invertebrates upstream and downstream of HVDC cable crossing locations for 2 years after completion of construction.

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
combination effects considered unlikely.										
Tier 2										
No sites identified										
Tier 3										
Indirect effects on statutory designated sites as a result of contamination of water courses upstream of SSSI. No additional in combination impacts identified.	✓	x	✓	ONS06, ONS07, and ONS67 (**see Table 1.14**).	C: High/ National D: High/ National	C: Low adverse D: Negligible	C: Minor Adverse D: Minor adverse	ONS48	C: Minor Adverse D: Minor adverse	Regular inspections during construction/decommissioning phases.
Indirect effects on non-statutory designated sites as a result of contamination of water courses and dust deposition or other contamination events. Potential for additional impacts present.	✓	x	✓	ONS01, ONS02, ONS06, ONS07, and ONS94 (**see Table 1.14**).	C: Medium/ County D: Medium/ County	C: Low adverse D: Low adverse	C: Minor adverse D: Minor adverse	None Proposed	C: Minor D: Minor adverse	Regular inspections during construction/decommissioning phases.
Permanent loss of Devon hedgerows as a result of construction of Converter Site in combination with minor hedgerow losses for other schemes considered	✓	x	x	ONS17 and ONS37 (**see Table 1.14**).	C: Medium/ County O: Medium/ County D: Medium/ County	C: Medium adverse O: No change D: Low adverse	C: Moderate adverse O: Negligible D: Minor adverse	None proposed.	C: Moderate adverse O: Negligible D: Minor adverse	Monitor condition of new hedgerows as part of the LEMP to ensure that they establish correctly.
Temporary potential damage to water courses with wooded banks as a result of construction of HVDC cable route. Potential for	✓	x	✓	ONS39, ONS02, ONS67, and ONS94 (**see Table 1.14**).	C: Medium/ County O: No change	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	ONS48	C: Minor adverse O: Negligible	Monitor works during construction period to ensure compliance with

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
disturbance to wildlife using littoral habitats and potential for construction contamination through water and air during construction period. No additional in combination impacts identified					D: Medium/County				D: Minor adverse	measures implemented.
Temporary loss of semi-improved grassland as a result of HVDC cable route construction, including compounds. No additional in combination impacts identified	✓	x	✓	ONS42 (**see Table 1.14**).	C: Low/ District O: Low/ District D: Low/ District	C: Medium adverse O: No change D: Medium adverse	C: Minor adverse O: Negligible D: Minor adverse	None Proposed	C: Minor adverse O: Negligible D: Minor adverse	None
Temporary and permanent loss of improved grassland and arable leys as a result of construction of HVDC cable route and Converter Site. In combination there will be additional loss of this habitat.	✓	x	✓	ONS42 (**see Table 1.14**).	C: Negligible/ Parish O: Negligible/ Parish D: Negligible/ Parish	C: High adverse O: No change D: High adverse	C: Minor adverse O: Negligible D: Minor adverse	None proposed	C: Moderate adverse O: Negligible D: Minor adverse	None
Temporary and permanent loss of arable cropland as a result of construction of HVDC cable route and Converter Site. In combination there may be additional loss of this habitat, although no significant change in residual effects on ecology	✓	x	✓	ONS42 (**see Table 1.14**).	C: Negligible/ Parish O: Negligible/ Parish D: Negligible/ Parish	C: High adverse O: No change D: High adverse	C: Minor adverse O: Negligible D: Minor adverse	None proposed	C: Minor adverse O: Negligible D: Minor adverse	None

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
and nature conservation are foreseen.										
Temporary and permanent damage to dormouse habitat (hedgerows) and potential disturbance to habitats adjacent to construction works as a result of construction of HVDC cable route, compounds, road widening and Converter Site. Potential increase in habitat availability/ connectivity as a result of mitigation planting during operation. No additional impacts on dormice considered likely as a result of the in-combination effects, due to locations of the schemes considered.	✓	x	✓	ONS41, ONS37, and ONS17 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Medium adverse O: Negligible D: Low adverse	C: Moderate adverse O: Negligible D: Minor adverse	ONS54 and ONS55.	C: Moderate adverse O: Negligible D: Minor adverse	Dormouse population monitoring in new/replaced habitat areas annually for 5 years post construction and again in years 7 and 10.
Potential disturbance to water-courses and littoral habitats used by otters during construction. Potential for contamination of water courses during construction. No additional impacts on otters considered likely as a result of the in-combination effects, due to locations of the schemes considered.	✓	x	✓	ONS02, ONS39, ONS43, ONS06, ONS07, ONS44, and ONS67 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	ONS86 and ONS56	C: Minor adverse O: Negligible D: Minor adverse	Pre-commencement surveys. Post completion survey to ensure no remaining impacts on potential otter habitats on completion of construction works.

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
Damage to hedgerows used as foraging/ migration flight-lines by bats. Removal of small number of trees potentially supporting bat roosts. Potential disturbance to adjacent habitats potentially including bat roosts from construction works. Potential increase in habitat availability/ connectivity as a result of mitigation planting during operation. Potential in-combination increase in disturbance and loss of foraging habitat available for light-sensitive bats, primarily due to increased urbanisation from other schemes	✓	x	✓	ONS01, ONS37, ONS41, ONS58, ONS59, ONS66, ONS94 and ONS17 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Medium adverse O:Negligible D: Low adverse	C: Moderate adverse O: Negligible D: Minor adverse	ONS01, ONS37, ONS41, ONS58, ONS59, ONS66, ONS94 and ONS17.	C: Moderate adverse O: Negligible D: Minor adverse	Update surveys of all trees to be removed prior to commencement of construction to ensure no new roosts have been occupied. Monitoring bat mitigation bat boxes for evidence of use for 5 years post construction period.
Potential damage or disturbance to badger setts as a result of construction of HVDC cable route, compounds, road widening and Converter Site. Potential for injury to individual animals as a result of falling into excavations or other mishaps within construction areas. No additional impacts as a result of in combination effects expected due to	✓	x	✓	ONS60 (**see Table 1.14**).	C: Negligible/ Parish O; Negligible/ Parish D: Negligible/ Parish	C: Low adverse (if new setts established) O: No change D: Medium adverse (if new setts found)	C: Minor adverse (if new setts found) O: No change D: Minor adverse (if new setts found)	ONS47	C: Minor adverse (if new setts established) O: No change D: Minor adverse (if new setts found)	Pre-commencement surveys will be required and any further monitoring which may become required as a part of any licenced mitigation scheme.

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
general low levels of badger activity in the area.										
Potential damage or disturbance to habitats used by breeding birds and reduction in available breeding habitat for duration of construction. Some permanent loss of breeding habitats as a result of construction of the Converter Site. Slight increase in breeding habitat availability as a result of habitat enhancements/ creation associated with reinstatement of HVDC cable route and landscape scheme for the Converter Site. In combination effects likely to increase pressure on potential nesting habitat for birds.	✓	x	✓	ONS49, ONS50, and ONS61 (**see Table 1.14**).	C: Medium/ County O: Medium/ County D: Medium/ County	C: Medium adverse O: Negligible l D: Low adverse	C: Moderate adverse O: Negligible D: Minor adverse	None Proposed	C: Moderate adverse O: Negligible D: Minor adverse	None
Potential disturbance to areas used by wintering and migratory birds for high tide roosting and foraging as a result of construction of HVDC cable route (especially in areas adjacent to landfall site and Torridge Estuary crossing). Due to location of schemes considered, additional in-	✓	x	✓	ONS50 (**see Table 1.14**).	C: Medium/ County O: Medium/ County D: Medium/ County	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	None proposed	C: Minor adverse O: Negligible D: Minor adverse	None

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
combination effects considered unlikely.										
Potential temporary and possibly permanent destruction of reptile habitat as a result of construction of HVDC cable route and Converter Site. Potential for injury to individual reptiles as a result of construction work. Some increase in potential reptile habitat as a result of landscape design at Converter Site. Due to location of schemes considered, additional in-combination effects considered unlikely.	✓	x	✓	ONS17 (**see Table 1.14**).	C: Low/ District O: Low/ District D: Low/ District	C: Medium adverse O: Low beneficial D: Medium adverse	C: Minor adverse O: Minor beneficial D: Minor adverse	ONS51	C: Minor adverse O: Minor beneficial D: Minor adverse	Monitor newly-created habitats at Converter Site for evidence of reptile take-up.
Possible contamination incidents as a result of construction activity adjacent to water courses affecting conditions for fish. Due to location of schemes considered, additional in-combination effects considered unlikely.	✓	x	✓	ONS02, ONS07, ONS39 and ONS67 (**see Table 1.14**).	C: Medium/ Regional O: Medium/ Regional D: Medium/ Regional	C: Low adverse O: Negligible D: Low adverse	C: Minor adverse O: Negligible D: Minor adverse	None proposed	C: Minor adverse O: Negligible D: Minor adverse	None
Possible contamination incidents as a result of construction activity adjacent to water courses affecting conditions for aquatic invertebrates. Due to location of schemes	✓	x	✓	ONS02, ONS07, ONS39 and ONS67 (**see Table 1.14**).	C: Low/ District O: Low/ District D: Low/District	C: Low adverse O: Negligible D; Medium adverse	C: Minor adverse O: Negligible D: Minor adverse	None proposed	C: Minor adverse O: Negligible D: Minor adverse	Monitor aquatic invertebrates upstream and downstream of HVDC cable crossing locations for 2 years after

Description of Impact	Phase[a]			Embedded Mitigation	Sensitivity of receptor	Magnitude of impact	Significance of Effect	Further Mitigation	Residual Effect	Proposed Monitoring
	C	O	D							
considered, additional in-combination effects considered unlikely.										completion of construction.

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