XLINKS MOROCCO-UK POWER PROJECT

Preliminary Environmental Information Report

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 confirmed by National Grid Electricity Transmission.
Alverdiscott Substation site	The National Grid Electricity Transmission substation 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.
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.
High Voltage Alternating Current Cables	The High Voltage Alternating Current cables which would bring electricity from the converter stations to the new Alverdiscott Substation Connection Development.
High Voltage Direct Current 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 Bay inclusive of all construction works, including the offshore and onshore cable corridors, and landfall compound(s).

Term	Meaning
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 United Kingdom Exclusive Economic Zone.
Onshore Infrastructure Area	The proposed area within the Proposed Development Draft Order Limits landward of the transition joint bays, which contains the onshore High Voltage Direct Current Cables, Converter Site, the Alverdiscott Substation Connection Development, highway works, utility diversions and onshore High Voltage Alternating Current Cables.
Onshore HVDC Cable Corridor	The proposed corridor within which the onshore High Voltage Direct Current cables will be located.
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 the Xlinks Morocco-UK Power Project within the UK, which includes the offshore cables (from the UK Exclusive Economic Zone to landfall), landfall site, onshore Direct Current and Alternating Current cables, converter stations, road upgrade works and, based on current assumptions, the Alverdiscott Substation Connection Development.
Proposed Development Draft 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).
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
Defra	Department of Agriculture, Fisheries and Food
DC	Direct Current
DMRB	Design Manual for Roads and Bridges (Standards for Highways) – including archived advice

Acronym	Meaning
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 Feature
JNCC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
OS	Ordnance Survey
PEIR	Preliminary Environmental Information Report
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

Unit	Meaning
Ha	Hectares
kV	Kilovolt

1 ONSHORE ECOLOGY AND NATURE CONSERVATION

1.1 Introduction

1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the preliminary findings of the Environmental Impact Assessment (EIA) work undertaken to date 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'.

1.1.2 This chapter considers the potential 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.

1.1.3 In particular, this PEIR chapter:

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

1.1.4 The assessment presented is informed by the following technical chapters:

- Volume 1, Chapter 3, Project Description, of the PEIR;
- Volume 2, Chapter 3, Hydrology and Flood Risk, of the PEIR;
- Volume 2, Chapter 4, Hydrogeology, Geology and Ground Conditions, of the PEIR;
- Volume 2, Chapter 7, Air Quality, of the PEIR; and
- Volume 4 Chapter 2, Landscape, Seascape and Visual Resources, of the PEIR.

1.1.5 The PEIR will inform pre-application consultation. Following consultation, comments on the PEIR and any refinements in design will be reviewed and taken into account, where appropriate, in preparation for the Environmental Statement (ES) that will accompany the application to the Planning Inspectorate for development consent.

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 Hedgerow Regulations 1997. Identifies Important Hedgerows and provides measures for their protection; and
- 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.

Planning Policy Context

1.2.2 The Proposed Development will be located within the UK Exclusive Economic Zone offshore waters (beyond 12 nm from the English coast) and inshore waters, with the onshore infrastructure located wholly within Devon, England. As set out in Volume 1, Chapter 1: Introduction of the PEIR, 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 2024a);
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero 2024b); and

- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero 2024c).

1.2.4 **Table 1.1** sets out key aspects from the NPSs relevant to onshore ecology and nature conservation, 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 PEIR
NPS EN-1 Overarching National Policy Statement for Energy	
Environmental and biodiversity net gain - 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 (section 4.6). Net gain should be measured using the latest version of the Biodiversity Metric (currently the statutory biodiversity metric) to identify gains.	Approach to biodiversity net gain (BNG) is set out in **section 1.7**, with proposed minimum areas of habitat creation, associated with the Proposed Development, demonstrating potential to achieve in excess of 10% BNG. While final details of BNG provision have not yet been finalised, it is expected that they will include measures which will expand provision of woodland and potentially increase public access to these habitats, addressing points raised in paragraph 4.6.13 of NPS EN-1.
Biodiversity and Geological Conservation - 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 baseline set out in **Section 1.5**. Approach to protection of sites, habitats and species set out in **sections 1.7** and **1.14**. Early scoping responses from Natural England have indicated that impacts on internationally-important sites requiring HRA can be scoped out (see **Table 1.4** below). By careful routing, the scheme avoids direct impacts on any statutory designated sites and minimises effects on locally-designated sites. In many cases, 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 set out in **section 1.7**, including reinstatement of Devon Hedgerows and enhancement of habitat to increase connectivity across landscape. While final details of BNG provision have not yet been finalised, it is expected that they will include measures which will expand provision of woodland to link existing woodlands, providing landscape scale features and measures to potentially increase public access to these habitats will also be explored.
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	Underground cable corridor for the HVDC cables from landfall to Converter Site is included in general scheme design, set out in Volume 1, Chapter 3, Project Description. Other mitigation relating to designated sites, habitats and protected species set

Summary of NPS requirement	How and where considered in the PEIR
concerned with placement of overhead cable routes in relation to bird flight lines and migratory routes.	out in **section 1.7**. 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 HDD.

The National Planning Policy Framework

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

1.2.6 A summary of the NPPF policies relevant to this chapter is set out in **Table 1.2**.

Table 1.2: Summary of NPPF requirements relevant to this chapter

Policy	Key provisions	How and where considered in the PEIR
15. Conserving and Enhancing the Natural Environment	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 set out in **section 1.7.**
	Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;	Approach to minimising impacts on biodiversity and provided BNG (including scope for landscape-scale habitat enhancement) set out in **section 1.7**.
	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 set out in **Volume 2, Figure 1.1**. Baseline habitats identified to date are shown in **Volume 2, Appendix 1.1**: Phase 1 Habitat Survey, of the PEIR.
	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 1.7**. Also consideration of potential for BNG.

1.2.7 The Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2021) 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

1.2.8 The onshore elements of the Proposed Development are located within the administrative area of Torridge District Council. The policy context for the Proposed Development is set out in Volume 1, Chapter 2: Policy and Legislation Context, of the PEIR. In addition, 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 PEIR
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.	Approach to biodiversity net gain (BNG) is set out in **section 1.7**, with proposed minimum areas of habitat creation, associated with the Proposed Development, demonstrating potential to achieve in excess of 10% BNG.
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 1.7**. **Section 1.7** also considers the potential for BNG.
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 1.7**. **Section 1.7** also considers the potential for BNG.

1.3 Consultation and Engagement

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 and operational 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 ecology and nature conservation are listed in **Table 1.4**, together with details of how these issues have been addressed within the PEIR.

Table 1.4: Summary of Scoping Responses

Comment	How and where considered in the PEIR
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 1.12** of this chapter. The assessment of effects for the Proposed Development has been assessed in **sections 1.8** to **1.10**.
'*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*.'	The proposed scope of additional surveys required is set out in **section 1.15** of this chapter. Additional surveys will be required to consider revisions to Proposed Development design and route alignment since initial surveys were undertaken and ensure sufficient coverage is included to cover areas to which access was not previously available. Findings of these surveys will be incorporated into the ecology and nature conservation baseline and assessment for the ES.
'*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 has not been complete access to all areas of the Proposed Development for detailed survey 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 avoidance/mitigation measures which may become necessary, if they are identified.
'*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*	The presence of INNS in the ZOI of the Proposed Development will be further addressed within the ES, as access restrictions have precluded complete survey coverage so far.

Comment	How and where considered in the PEIR
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.'	
'*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 (eg 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*.'	Lighting is briefly discussed in Table 1.13, Maximum Design Scenario Considered and **Table 1.14**, Mitigation measures adopted as part of the Proposed Development. Also in **section 1.8,** Preliminary Assessment of Construction of this chapter.
'*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 possible. The Applicant is referred to the Inspectorate's Advice Note Eleven, Annex C*.'	Requirements for EPS licenses will be confirmed within the ES and where such licenses are required, draft licence applications will be issued to Natural England for their assurance that any such licences would be approved.
'*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 will provide more detail of measures to avoid contamination/pollution incidents downstream on the estuary, although this will primarily be achieved by the proposed HDD crossing method.
'*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 CEMP documents
'*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*	Information on the specific location of places of rest and other places used by sensitive species will be provided as a confidential annex to the ES.

Comment	How and where considered in the PEIR
a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.'	
'*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*.'	The ES will set out a complete landscape and ecology mitigation plan designed to address impacts resulting from both HVDC, HVAC cabling and Converter Sites
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 in **Table 1.6**, Issues considered within this assessment, **section 1.5**, Baseline environment, **Table 1.13** Maximum Design Scenario Considered, **Table 1.14**, Mitigation measures adopted as part of the Proposed Development and **section 1.8** Preliminary Assessment of Construction, of this chapter.
'*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 **section 1.5**, Baseline environment and initial potential for impacts on these sites is addressed in **section 1.8** Preliminary Assessment of Construction, of this chapter.
'*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 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*.'	Lighting is briefly discussed in Table 1.13, Maximum Design Scenario Considered and **Table 1.14**, Mitigation measures adopted as part of the Proposed Development. Also in **section 1.8,** Preliminary Assessment of Construction of this chapter.
'*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 will be further addressed within the ES, as access restrictions have precluded complete survey coverage so far.
'*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*	Noted. The need for pre-commencement surveys for some species is addressed in **Table 1.14** Mitigation measures adopted as part of the Proposed Development and are also referred to in **Table 1.17** Summary of potential environmental effects, of this chapter.

Comment	How and where considered in the PEIR
otters 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).*'	Noted. The need for pre-commencement surveys for some species is addressed in **Table 1.14** Mitigation measures adopted as part of the Proposed Development and are also referred to in **Table 1.17** Summary of potential environmental effects, of this chapter.
'*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*.'	Noted. BNG is addressed in **section 1.7**, and finalised design for BNG habitat creation will be included within the ES.
'*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 not yet available.
'*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 BNG enhancements will include some watercourse measures, which will be detailed in the final ES, when BNG proposals are finalised. Efforts will be included to ensure 'Woods 4 Water' and similar projects are considered and used to direct such measures.
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*	Noted. Woodland creation, particularly where this forms connective links between existing woodland, will be considered within the final design of BNG habitat creation measures. Final details of the BNG measures will be set out in the ES.

Comment	How and where considered in the PEIR
be key as it would be enhancing areas of Grade 4 agricultural land bringing significant biodiversity improvements.'	
'*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'*.'	There has not been complete access to all areas of the Proposed Development for detailed survey 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 avoidance/mitigation measures which may become necessary, if they are identified.
'*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 1.5**, direct impacts on woodland of all kinds is avoided wherever possible and measures to prevent indirect impacts will be set out in detail in the proposed CEMP/LEMP for the Proposed Development.
'*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 is to be used to avoid impacts on all significant areas of woodland so far identified which are likely to be directly affected by the Proposed Development. Chapter 1, section 3, Project Description shows which areas are to be protected by HDD/ trenchless cabling methods. Comments on protected areas around trees noted.
'*With this in mind, and particularly in the context of the Climate Emergency being declared throughout the 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*.'	Woodland creation, particularly where this forms connective links between existing woodland, will be considered within the final design of BNG habitat creation measures. Final details of the BNG measures will be set out in the ES.
'*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*	Monitoring provision is addressed in **section 1.8** Preliminary Assessment of Construction of this chapter. Establishing Woodland Management Plans would be included within the proposed CEMP.

Comment	How and where considered in the PEIR
Woodland Management Plans for any woodland creation would be expected.'	
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 sought from the Devon Biodiversity Records Centre as set out in Volume 2, Appendix 1.2: Ecological Desk Study. It is noted that an updated desk study will be completed prior to submission of the final 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 **sections 1.8 – 1.10** of this chapter. BNG is addressed in **section 1.7**, and finalised design for BNG habitat creation will be included within the ES
'*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 1.4**, Guidance, 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.
'*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 will provide more detail of measures to avoid contamination/pollution incidents downstream on the estuary, although this will primarily be achieved by the proposed HDD crossing method
'*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 1.8 – 1.10**. Proposed mitigation is set out in **section 1.7** and **1.14**
'*Applicants should check to see if a mitigation licence is required using NE guidance on licencing NE wildlife licences*.'	When all protected species surveys are completed, and potential impacts have been assessed, guidance on the need for licensing will be followed. Where required, draft licence applications will be

Comment	How and where considered in the PEIR
	submitted to Natural England for LoNI in relation to these draft licences.
'*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*.'	Construction, operation and decommissioning phases are considered in **sections 1.8 – 1.10** 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 this chapter). 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).
'*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 1.5,** Baseline Environment. Volume 2, Appendices 1.1 – 1.11 of the PEIR describe baseline as currently understood, but additional surveys will be undertaken to address areas not currently accessible, or where surveys are otherwise incomplete.
'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 on shore HVDC route, as set out in **section 1.7** 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*.'	There has not been complete access to all areas of the Proposed Development for detailed survey 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 avoidance/mitigation measures which may become necessary, if they are identified. HDD is to be used to avoid impacts on all significant areas of woodland so far identified which are likely to be directly affected by the Proposed Development. Chapter 1, section 3, Project Description shows

Comment	How and where considered in the PEIR
	which areas are to be protected by HDD/ trenchless cabling methods. Comments on protected areas around trees noted.
'*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. When details of the BNG package have been finalised, they will be measured and assessed using the statutory Biodiversity Metric Tool and associated guidance.
'*Biodiversity Net Gain outcomes can be achieved on-site, off-site or through a combination of both. On-site provision should be considered first. Delivery should create or enhance habitats of equal or higher value. When delivering net gain, opportunities should be sought to link delivery to relevant plans or strategies e.g. Green Infrastructure Strategies or Local Nature Recovery Strategies where these are being prepared by local planning authorities*.'	The BNG package is not finalised at this time but will include a combination of on and off-site outcomes, which will seek to tie in with appropriate local initiatives, such as those set out by the North Devon Biosphere Reserve, and also take into account comments from organisations such as the EA and Forestry Commission, as set out above.
'*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*.'	This request is noted and will be included within the finalised landscape and BNG proposals for the scheme.

1.3.3 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**. Following scoping, consultation and engagement with interested parties specific to ecology and nature conservation will continue.

1.3.4 A summary of the key issues raised during consultation activities undertaken to date is presented in **Table 1.5**, together with how these issues have been considered in the production of this PEIR 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 PEIR
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 1.4** - Site Specific Surveys are detailed in **paragraph 1.4.14** and reported in Volume 2, Appendices 1.1-1.11 of the PEIR.
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.	See **section 1.7** – Biodiversity Net Gain is discussed in.

1.4 Methodology

Relevant Guidance

1.4.1 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).

1.4.2 This approach is in line with the overarching methodology set out in Volume 1 Chapter 5. 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.

Scope of the Assessment

1.4.3 The scope of this PEIR has been developed in consultation with relevant statutory and non-statutory consultees as detailed in **Table 1.4** and **Table 1.5**. It includes desk-study and baseline information obtained from direct surveys where access was possible.

1.4.4 In addition, reference has been made to the publicly-accessible ES for the Atlantic Array Offshore Wind Farm project which was applied for in 2013 but not completed and which followed a similar cable route from landfall to the Alverdiscott Substation site. While all receptor groups have been re-surveyed, the information from this former scheme provides useful historic information and provides an overview of what species should be expected. Reference to this project allows some level of ground-truthing to ensure that there is some consistency between what was identified in 2013 and what is being identified now.

1.4.5 Taking into account the scoping and consultation process to date, **Table 1.6** summarises the issues considered as part of this assessment.

Table 1.6: Issues considered within this assessment

Activity	Potential effects 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.
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.
	Potential impacts on important habitat features such as Devon hedgerows, woodlands and water-courses.
	Potential impacts on protected or otherwise notable species such as wintering and migratory birds, breeding birds, dormice, otters, bats, badgers, reptiles and invertebrates.
Construction of Converter Site	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.
	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 water-courses).
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	
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
Withdrawal of cabling along HVDC cable corridor	Potential indirect impacts of disturbance to species utilising adjacent habitats
Dismantling of the landfall site	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)
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 hedgerows, woodlands and water-courses.
	Potential impacts on protected or otherwise notable species such as wintering and migratory birds, breeding birds, dormice, otters, bats, badgers, reptiles and invertebrates (and any other IEF which has occurred in the intervening period between construction and de-commissioning)

1.4.6 Effects which are not considered likely to be significant have been scoped out of the assessment as confirmed in the SoS's scoping opinion dated 7 March 2024. A summary of the effects scoped out is presented in **Table 1.7**.

Table 1.7: Issues scoped out of the assessment

Activity	Potential effects scoped out of the assessment
Construction	
Installation of landfall and onshore HVDC cable	Potential effects on higher level terrestrial designated sites requiring HRA as advised by Natural England.
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.
Decommissioning	
Decommissioning of the Converter Site and associated cables.	Potential effects on higher level terrestrial designated sites requiring HRA as advised by Natural England.

Study Area

1.4.7 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 1.7**, potential effects on higher level terrestrial designated sites requiring HRA has been scoped out, as advised by Natural England and confirmed by the SoS.

1.4.8 It is recognised that the initial desk study requires updating, as it initially requested data on designated sites to 2 km radius of the Onshore Infrastructure Area, Converter Site and Alverdiscott Substation site. However, the statutory designated sites within 5 km have been researched via the MAGIC interactive mapping programme and considered in this PEIR and will be fully updated prior to the submission of the final ES.

1.4.9 The survey areas used for habitat and species surveys for the assessment at this stage were based on the type of survey being undertaken.

1.4.10 Habitat surveys extended to 50 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.

1.4.11 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 site 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 watercourses likely to be affected by construction of the Onshore HVDC Cable Corridor or disturbed by this activity. Where land owner access was possible, surveys were focussed on crossing locations, but extended as far as possible (within existing land-owner holdings) up and down-stream of the proposed crossing location.
- Badger survey: Onshore Infrastructure Area with up to 50m buffer as extended where field signs suggest possible presence of badger setts beyond the boundary.

1.4.12 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.

Methodology for Baseline Studies

Desk Studies

1.4.13 An initial desk study was carried out in November 2022, where ecological data was requested from the Devon Biodiversity Records Centre (DBRC). Further information is provided in Volume 2, Appendix 1.2: Ecological desk study of the PEIR.

Site-Specific Surveys

1.4.14 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;
- 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;
- 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 Due to access limitations, no survey has been undertaken on the Converter Site or Alverdiscott Substation Site as yet;

- 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 on the Converter Site or Alverdiscott Substation Site as yet;
- 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. Due to access limitations, no survey has been undertaken on the Converter Site or Alverdiscott Substation Site as yet;
- 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. Due to access limitations, no survey has been undertaken on the Converter Site or Alverdiscott Substation Site as yet;
- Badger survey. Survey of all accessible parts of the Onshore Infrastructure Area to at least 50 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, no survey has been undertaken on the Converter Site or Alverdiscott Substation Site as yet;
- 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 Converter Site or Alverdiscott Substation Site. However, breeding bird survey was carried out from public rights of way 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;
- Reptile survey. Following methods set out in JNCC (1998) The Herpetofauna Workers' Manual. Due to access limitations no surveys have been carried out at either the landfall site or Converter Site/Alverdiscott Substation Site as yet;
- Aquatic Invertebrate survey. Following methods set out in Environment Agency internal document No. 018_08 (2017); and
- River Corridor 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/

Impact Assessment Methodology

Overview

1.4.15 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 PEIR 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).

1.4.16 The approach to determining the significance of effects is a two-stage process that involves defining the magnitude of the impact and the sensitivity of the receptor. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 5: EIA Methodology, of the PEIR.

Receptor Sensitivity/Value

1.4.17 The criteria for defining sensitivity of Valued Ecological Receptors (VERs) in this chapter are outlined in **Table 1.8** below.

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, local/district scale
Negligible	Very low importance and rarity, local/parish scale

Magnitude of Impact

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

Table 1.9: Impact magnitude criteria

Magnitude of impact		Definition
High	Adverse	Loss of VER and/or quality and integrity of VER; for example, severe loss or damage to key habitats within statutory designated sites or habitats within or outside of the site which are key in supporting populations for which the site is designated.
	Beneficial	Large scale or major improvement of VER quality; extensive restoration or enhancement; such as large scale habitat improvements which would support and enhance species for which a statutory site has been designated.
Medium	Adverse	Loss of VER, but not adversely affecting the integrity; For example, partial loss of/damage to key habitats, features or elements of a designated site which may affect the populations or habitats for which it is designated, but not to the extent that the site would lose its integrity and all value for that VER.

Magnitude of impact		Definition
	Beneficial	Benefit to, or addition of, key habitats, features or elements; improvement of VER 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 of a VER.
	Beneficial	Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on a VER or a reduced risk of negative impact occurring.
Negligible	Adverse	Very minor loss or detrimental alteration to one or more characteristics, features or elements of a VER.
	Beneficial	Very minor benefit to, or positive addition of one or more characteristics, features or elements of a VER.

Duration of Impact

1.4.19 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.

1.4.20 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.

1.4.21 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.

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

Significance of Effect

1.4.23 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**. It is noted that matrices such as these are not well supported in the CIEEM guidance (CIEEM 2018), but it is included here to allow consistency across all topics in the assessment. Where a range of significance levels is presented, the final assessment for each effect is based upon expert judgement, taking into account the conservation status of the receptor being considered, trends in its population/status (where known), its ecological resilience and surrounding ecological conditions which may allow its continued existence at a given level.

1.4.24 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.

1.4.25 For the purpose of this assessment, any effects with a significance level of minor or less are considered not 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

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

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

- Major: These beneficial or adverse effects are 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 Proposed Development.
- 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

1.4.28 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 proposed Converter Site and Alverdiscott Substation Site as well as at the landfall and some parts of the Onshore HVDC Cable Corridor around Abbottsham.

1.4.29 While this has prevented detailed survey work from specific locations, it has been possible to carry out a considerable amount of work from nearby locations on public rights of way, such as along the coastal footpath and linking footpaths, which provide clear views of the landfall site 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.

1.4.30 Some other groups such as dormice and reptiles have not been surveyed, despite the presence of habitats suitable for them in these areas.

1.4.31 For some groups, a survey has suggested that it will be necessary to assume a likely presence where surveys are not able to show absence definitively. In particular, it is not possible to scope out the presence of species such as dormice in hedgerows, due to how the hedges interlink and connect frequently with areas of woodland. In the case of dormice, it is assumed that all hedgerows associated with the Onshore Infrastructure Area may support dormice.

1.4.32 In some cases, surveys have been undertaken on the Proposed Development design (including cable corridors and converter site locations) understood at the time of survey which have subsequently been revised. In most cases, this has had little effect on the understanding of the baseline at the site, as minor route realignments and inclusion of additional compounds have been covered by existing or subsequent survey updates. Most significant changes have been to the proposed location of the converter site (now sited immediately west of the existing Alverdiscott Substation) and revisions to the routing of the Onshore HVDC Cable Corridor to the west of Abbottsham. In both cases, landowner access has not been available to date, and additional surveys will be required to ensure full baseline understanding of the site.

1.4.33 The above situation will also have affected the desk study results, and an update will be required. Again, the currently reported desk study results will cover the majority of existing designated sites, and it is likely that some statutory sites currently reported within the desk study will fall further away from the final Onshore Infrastructure Area footprint.

1.4.34 It is further assumed that additional surveys, where necessary to complete a baseline understanding of the Onshore Infrastructure Area will be undertaken in 2024 and will inform the assessment to be reported in the ES. The proposed scope of additional surveys required is set out in **section 1.15**.

1.5 Baseline Environment

Desk Study

1.5.1 Information on ecology and nature conservation within the study area was collected through a 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)

Identification of designated sites

1.5.2 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 shown on Volume 2,

Figure 1.1 of the PEIR. A summary of these is set out in **Table 1.11**. Marine designations such as Marine Conservation Zones (MCZ) have not been included in this list, as they are addressed within Volume 3, Chapter 8: Physical processes of the PEIR.

Table 1.11: Designated Sites and relevant qualifying interest

Designated sites	Distance to the Proposed Development Draft Order Limits (km)	Relevant Qualifying Interest
Statutory Designations (see Volume 2, Figure 1.1)		
Mermaid's Pool to Rowden Gut SSSI	Adjacent to order limits	Geological SSSI – Complete sequence through the Bideford Formation
Kynoch's Foreshore LNR	Lies under order limits at Torridge Estuary	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 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 (see Volume 2, Figure 1.1)		
Barton Farm Unconfirmed Wildlife Site (UWS)	N/A	Rough grassland/tall herbs/scrub
Haycroft UWS	N/A	Dry grassland/rough grassland/bracken/scrub/SNBW
Southcott Wood UWS	N/A	Ancient semi-natural broadleaved woodland

Designated sites	Distance to the Proposed Development Draft Order Limits (km)	Relevant Qualifying Interest
Weare Wood UWS	N/A	Semi-natural broadleaved woodland/scrub/bracken
Woodhouse Wood UWS	N/A	Ancient semi-natural broadleaved woodland
Haddacott Moor CWS	0	Culm grassland and semi-improved grassland (former Culm grassland)
Lodge Plantation UWS	0	Old plantation - open canopy dry/rough grassland
Torridge Estuary CWS	0	Estuary and saltmarsh habitats
Abbotsham Cliff CWS	0.001	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

Designated sites	Distance to the Proposed Development Draft Order Limits (km)	Relevant Qualifying Interest
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
Kenwith Valley UWS	0.43	Open water/dry grassland/marshy grassland/scrub et
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. Heronry.
Souther Down UWS	0.81	Dry grassland/scrub
Nethercleave Wood ASNW	0.88	Ancient & Semi-Natural Woodland

Designated sites	Distance to the Proposed Development Draft Order Limits (km)	Relevant Qualifying Interest
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
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 (& 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 & 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

Designated sites	Distance to the Proposed Development Draft Order Limits (km)	Relevant Qualifying Interest
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 & 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
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

Designated sites	Distance to the Proposed Development Draft Order Limits (km)	Relevant Qualifying Interest
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

Site-Specific Surveys

Habitats– Onshore HVDC Cable Corridor

1.5.3 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 species poor, semi-improved grassland. These areas have greater species diversity and are of slightly greater value than areas of improved grassland. Within the survey corridor, a number of other habitats were identified, including semi-improved neutral and calcareous grassland and various types of woodland (See Volume 2, Appendix 1.1: Phase 1 Habitat Survey, Figure 1).

1.5.4 In addition, a number of sensitive habitats lie under proposed areas of HDD such as semi-natural broadleaved and plantation woodlands, small streams and watercourses, the River Torridge, intertidal mud/sand, saltmarsh and scrub. Details of the proposed HDD and other trenchless methodologies are set out in Volume 2, Chapter 3: Hydrology and Flood Risk of this PEIR. As the HDD operation will occur at some depth below these habitats and features, and the operation will occur from compounds offset from watercourses and sensitive habitats on either side (details of impacts from compounds have been included in the assessments below), no impacts are expected on these habitats, and they are not considered further in the assessment.

1.5.5 The use of HDD will enable the Onshore HVDC Corridor to pass under the important habitats and features at an appropriate depth to ensure no impact. Compounds associated with the insertion of cable ducts using the HDD method will be sited in locations which do not fall within any designated sites, or where they affect important habitats. As such the compound locations would not have

direct impacts upon the habitats or features. Volume 1, Chapter 3 Project Description provides details of HDD methods and locations of construction compounds associated with this methodology.

1.5.6 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;
- species poor semi-improved grassland – Parish level IEF;
- improved Grassland – does not have significant ecological value – IEF at the local level only;
- local streams (not including the Torridge Estuary, described under designated sites above) – District level IEFs; and
- arable land – has limited ecological value – IEF at the local level only.

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

1.5.8 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 waders and migratory wildfowl. Stands of reeds along the edge of the estuary are home to reed buntings, a species which has been in decline in recent years (British Trust for Ornithology).

1.5.9 Streams and wet ditches are present throughout the route, providing important corridors for wildlife. Willow scrub and overgrown hedges alongside streams create shady, sheltered conditions ideal for reptiles, such as grass snakes and amphibians. Common toad tadpoles were found at one site, a species which is undergoing a dramatic population decline in many areas. Wooded stream corridors are also likely to be important for bat dispersal and foraging and for otter foraging and migration. Aquatic invertebrate assemblages are likely to be supported in these streams. They may also be important for eels, protected under the Natural Environment and Rural Communities Act (NERC) 2006, Sections 41 and 42 and are a UK BAP priority species. Measures to protect eels are also included in the Eels Regulations 2009 and the Salmon and Freshwater Fisheries Act 1975. The small watercourses are also likely to support other fish species, such as bullhead, which are protected under Annex II of the EU Habitats Directive and the Salmon and Freshwater Fisheries Act 1975.

1.5.10 Several areas, particularly those with suitable southern aspects and less intensely managed grasslands next to hedges or scrubby areas may support common reptile species such as common lizard, slow worm and possibly adder.

1.5.11 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.

1.5.12 Much of the habitat present along the route is of value to common farmland bird species. In addition, those areas associated with the estuary are also important for waterfowl and other migrating species.

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 Regulations 1997.

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 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.

River Condition

1.5.16 The river condition assessment survey undertook assessments at five locations (see Volume 2, Appendix 1.11: River condition assessment of the PEIR). These were where the HVDC Onshore Cable Corridor crossed smaller watercourses. The Torridge Estuary crossing was excluded from this assessment as it is tidal and not suited to this form of survey.

1.5.17 The HVDC Cable Corridor crosses up to 6 watercourses in addition to the River Torridge. These include Kenwith Stream, 4 tributaries feeding into Jennetts reservoir and a watercourse forming the southern and eastern boundaries of the Converter Site/Alverdiscott Substation Site. Surveys completed to date are described as follows:

- Site 1 was Kenwith Stream. This was assessed as in 'Good' condition;
- Site 3 was situated in Littleham Wood. This was assessed as in 'Good' condition;
- Site 4 was west of West Ashridge Farm. This was assessed as in 'Fairly Good' condition; and
- Sites 5 and 6 were on the boundary of the Converter Site/Alverdiscott Substation Site. These were assessed as in 'Fairly Good' and 'Good' condition respectively.

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

Habitats – Converter Site

1.5.19 Although direct access has not been possible, it has been possible to identify the broad habitat types present on the Converter site location. This 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.

1.5.20 The 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.

1.5.21 It has additional grassland and arable fields adjacent to it, some, to the south containing a solar panel array. 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.

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

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

1.5.24 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 broad leaved plantation woodland (adjacent to the Converter Site) – County level IEF;
- hedges and boundaries – County level IEF;
- species poor semi-improved grassland (adjacent to Converter Site) – 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.

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

Protected Species

Bats

1.5.26 Surveys of the proposed compound locations identified for the Proposed Development in 2022 identified the following information still relevant to proposed compounds for the latest design.

1.5.27 Bat activity along the proposed Onshore HVDC Cable Corridor is generally dominated by three species; common pipistrelle, soprano pipistrelle and noctule. Pipistrelle species activity is heavily localised with most activity located around sheltered locations or valuable foraging areas. Noctule bats were recorded using most of the areas across the site, presumably commuting around the landscape. Noctules were observed foraging heavily in the cattle-grazed semi-improved grassland in some compounds. Usage of the landscape within survey area by most other species of bat is limited, with insufficient passes per night recorded to form conclusions on their trends. It is presumed their populations are limited within the area and that these bat species generally follow the same patterns as the more commonly identified species.

1.5.28 Annex II species were generally recorded at low levels, however sporadic peaks of activity from greater horseshoe bats and barbastelle throughout the year indicate a dynamic usage of the landscape where they exploit seasonally available food sources and avoid overly exposed situations during variable

weather conditions. Evidence derived from the surveyed compartments did not suggest the presence of important commuting or foraging routes for Annex II species. 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 identified dark corridors of value to commuting and foraging bats during the works.

1.5.29 Evidence from 2023 surveys of additional compounds surveyed an additional six areas (see Volume 2, Appendix 1.4: Bat Survey). Bat activity at the additional compound locations along the proposed Onshore HVDC Cable Corridor is generally dominated by common pipistrelle and soprano pipistrelle bats. Pipistrelle species activity is heavily localised, with most activity located around sheltered locations or valuable foraging areas. Usage of the landscape by most other species of bat is limited, with insufficient passes per night recorded to form conclusions on their trends. Their populations are presumed to be limited within the area, and these bat species generally follow the same patterns as the more commonly identified species.

1.5.30 Most species utilising the survey locations were light tolerant species unlikely to be significantly impacted by temporary works.

1.5.31 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. Evidence derived from the surveyed compartments did not suggest the presence of important commuting or foraging areas for light sensitive species. Data collected throughout the season indicates a dynamic usage of the landscape by bats. Temporary works could result in these species being disadvantaged through disturbance to their commuting and foraging routes to the extent that they no longer utilise the survey areas. This could impact a regionally important bat assemblage.

1.5.32 The assessment of potential bat roosts in trees and structures concluded that most trees on or adjacent to the Proposed Development were of no/negligible or low bat roosting potential. The survey identified a total of 30 trees with moderate or high potential for bat roosting. Of these, 26 were assessed as of moderate potential and four were of high potential. See Volume 2, Appendix 1.5: Preliminary Bat Tree Roost Potential Report for details.

1.5.33 Due to access issues no bat surveys have been undertaken at the Converter Site, but the habitats present and nearby suggest that bats will be utilising hedgerows and potentially roosting in trees to similar levels as identified on compounds along the Onshore HVDC Cable Corridor. A review of ES information for the Atlantic Array scheme identified the presence of bat activity by species such as common and soprano pipistrelles, noctules, *Myotis* species and greater horseshoe bats near the current Converter Site.

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

Dormice

1.5.35 The survey has shown that dormice are present at several locations along the proposed Onshore HVDC Cable Corridor. The tube survey identified that dormice are present in six of the 50 hedgerows surveyed (See Volume 2, Appendix 1.3: Dormouse Survey of the PEIR).

1.5.36 Results differed from previous surveys undertaken for Atlantic Array in 2013 which found evidence of dormice near the substation location; near the Hallsannery

Centre, near Lower Dunn Farm in Littleham and near Gypsy Lane Wood on the Portledge Estate.

1.5.37 The results from the 2022 survey identified dormice at areas south of Gammaton Cross (associated with previously-proposed converter site), near Woodville Farm on Gammaton Road, west of Hallsannery, and at two locations close to the A39 approaching Abbotsham Cross.

1.5.38 In considering both sets of results, dormice occur in hedgerows across much of the route, and their presence cannot be discounted from any suitable hedgerow or other habitat feature (wooded stream margins or other woodland and scrub) affected by the route.

1.5.39 Due to access issues no dormouse surveys have been undertaken at the Converter Site, but the habitats present and nearby suggest that dormice could be utilising hedgerows in similar levels as identified elsewhere along the Onshore HVDC Cable Corridor. A review of ES information for the Atlantic Array scheme identified the presence of dormouse nests in 2012 in hedges associated with the current Converter Site.

1.5.40 Dormice are assessed as an IEF at a regional level.

Otters/Water voles

1.5.41 Survey Findings confirm that otters are active along the River Torridge and associated watercourses within the survey area. The freshness of the signs recorded during the survey indicates that otters regularly use the river and connecting watercourses.

1.5.42 Although no evidence of otter activity was reported along the River Dun and River Yeo, it cannot be concluded that otters are absent from these rivers. In addition to the watercourses within the survey area, it is considered likely that otters are utilising the Gammaton and Jennetts reservoirs and local fishing lakes for feeding.

1.5.43 No evidence of resting sites, holts or laying up locations has been identified at any of the locations where watercourses are crossed by the proposed Onshore HVDC Cable Corridor .

1.5.44 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.

1.5.45 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 PEIR.

1.5.46 No habitats of importance to otters or water voles occur at the Converter Site.

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

Badgers

1.5.48 In general, the amount of badger activity identified along the proposed route was less than expected. The discovery of several disused setts within the survey area suggests a contraction in population numbers from former times. This is likely to be a result of ongoing licensed culling in relation to bovine tuberculosis.

1.5.49 No active setts (i.e., currently in use by badgers) were identified on or within 30 m of the proposed Onshore HVDC Cable Corridor .

1.5.50 Small amounts of field signs indicating that some badger territories fall within the proposed Onshore HVDC Cable Corridor were identified.

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

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

1.5.53 Due to access issues no badger surveys have been undertaken at the Converter Site, but the habitats present and nearby suggest that badgers could be present, although no field signs were identified along road hedges in the vicinity of the Converter Site.

1.5.54 Badgers are therefore assessed as a IEF at parish level.

Birds

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

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

1.5.57 At the estuary site for wintering and migratory birds, 13 species of conservation importance were identified flying over and feeding within the survey area during the site visits. These included lapwing and herring gull, which are red list species. It is likely that the importance of this estuary site in isolation is limited, as it is utilised by foraging birds only as part of the wider estuarine environment; most species were recorded foraging outside, or passing through, the survey area.

1.5.58 No habitats likely to be of particular value to wintering and migratory birds occur at the Converter Site location.

1.5.59 The survey report identified the wintering and migratory bird populations identified at landfall and estuary sites as of no more than local value. Considering the presence of the nearby Taw Torridge Estuary SSSI, wintering and migratory birds are assessed as an IEF at the District level.

1.5.60 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.

1.5.61 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.

1.5.62 Due to access limitations, no comprehensive breeding bird survey of the Converter Site has been undertaken, but the surveys covered parts of the Converter Site available from public rights of way and concluded that breeding bird assemblages identified were of no more than local importance. A review of the breeding bird information from the Atlantic Array scheme in 2012 suggests that this was similar to results found at that time.

Herpetofauna

1.5.63 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.

1.5.64 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.

1.5.65 Reptiles were recorded at six of the 14 surveyed sites illustrated in Volume 2, Appendix 1.9: Reptile Survey of the PEIR. Three common reptile species were recorded; common lizard, slow worm and grass snake.

1.5.66 In accordance with Froglife's guidance for the interpretation of reptile survey findings (Froglife, 1999) it can be concluded that the sites support low populations of common reptiles, and no Key Reptile Sites were identified along the survey route.

1.5.67 No juvenile reptiles were recorded during the survey period. Therefore, it cannot be confirmed based on these survey findings that the reptile populations recorded are breeding or viable, although it is likely that this is the case.

1.5.68 Due to access issues no reptile surveys have been undertaken at the Converter Site, but there are habitats present which could support them. A review of the Atlantic Array scheme ES did not identify reptiles at the Converter Site in 2012.

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

Invertebrates

1.5.70 During the Phase 1 habitat survey, no habitats likely to support substantial terrestrial populations were identified but features potentially supporting interesting populations of aquatic invertebrates were noted. An initial survey of these was undertaken in September 2022, covering three watercourses where the Onshore HVDC Cable Corridor would cross: Kenwith Stream, and wooded watercourses at Littleham Wood and west of West Ashridge Farm both north of Littleham village and a watercourse forming the southern boundary of the Converter Site. Please refer to Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring Report for locations.

1.5.71 The invertebrate assemblages at Kenwith Stream (referred to as Rickard's Down Stream in the Volume 2, Appendix 1.10: Aquatic Invertebrate Monitoring of Watercourses to be crossed of the PEIR) were low in diversity and numbers and typical of small, stony streams with species dominated by *Gammarus* amphipods. No uncommon species were recorded, and the communities on this stretch of the stream were assessed as being of low conservation value.

1.5.72 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*. Several sensitive taxa were present, suggesting that the poor diversity was more an indication of the drought conditions rather than water quality issues. The assemblages were found to support no uncommon species and of moderate conservation interest.

1.5.73 At Higher Kingdon Stream, to the east of the existing Alverdiscott Substation, the assemblages were the most diverse in the current survey. The assemblages were dominated by *Gammarus* and chironomid larvae. Taxa sensitive to organic pollution were present, and again, it was believed that the low diversity was more a result of the very low water levels rather than water quality issues in the catchment. Conservation interest varied from moderate at the downstream site to fairly high at the other two locations.

1.5.74 A single larvae of the caddis species *Hydatophylax infumatus* was recorded at the central and upstream sites and was the only species of note within the communities. *H. infumatus* feeds on decaying submerged wood and is a widespread species of streams and rivers, although never found frequently due to the cryptic habits of its adults and larvae. Formerly regarded as a Local Species, it has since been given the status of Nationally Scarce. Due to its rarer status, it is thus more likely that the communities at the central and upstream sites are of 'high' conservation interest. The Higher Kingdon Stream will not be directly affected by the Proposed Development.

1.5.75 At Gammaton Stream water levels were very low, restricting sampling opportunities. Aquatic invertebrate diversity was low, of moderate conservation interest, and the assemblages dominated by *Gammarus* and Chironomidae.

1.5.76 No watercourses supporting aquatic invertebrates occur at the Converter Site.

1.5.77 Overall, the value of the aquatic invertebrate assemblage in all watercourses surveyed is of low to moderate conservation interest and has been assessed as an IEF at the District level.

Future Baseline Conditions

1.5.78 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.

1.5.79 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.

1.5.80 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.

1.5.81 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.

1.5.82 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.

1.5.83 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.

1.5.84 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

1.5.85 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.

1.5.86 **Table 1.12** identifies the receptors taken forward into the assessment.

Table 1.12: Key receptors taken forward to the 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, and approved 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		
Non-statutory designated sites within 2 km	90 locally designated sites lie within 2 km of the Onshore Infrastructure Area and 3 lie within the Onshore Infrastructure Area.	Medium/County
Habitat features		
Devon hedges	The Proposed Development will temporarily affect approximately 105 hedgerows	Medium/County
Streams with wooded bank habitats	The Proposed Development encounters 4 small streams (not including the Torridge Estuary)	Medium/County
Improved grasslands, including arable leys	The Proposed Development temporarily passes over areas of improved grassland and there will be permanent loss of this habitat at the Converter Site.	Negligible/Parish
Semi-improved grassland	The Proposed Development temporarily passes over small areas of semi-improved grassland.	Negligible/Parish
Arable cropland	The Proposed Development temporarily passes over areas of arable cropland and there will be	Negligible/Parish

Receptor	Description	Sensitivity/Value
	permanent loss of this habitat at the Converter Site.	
Protected species		
Dormice	Dormice are likely to be present in all hedgerows affected by the Proposed Development .	Medium/Regional
Otters	Otters are known to occur in the area and may be using all water-courses affected by the Proposed Development.	Medium/Regional
Bats	Bats use all compound areas and will also use all hedgerows affected by the Proposed Development as foraging and migration routes.	Medium/Regional
Badgers	Although no setts have so far been identified, badgers may be present or move back into the area of the Proposed Development.	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 suggest that they are not using areas associated with the Proposed Development in large numbers.	Medium/County
Reptiles	Reptiles are present at a number of locations affected by the Proposed Development.	Low/District
Other notable species		
Aquatic invertebrates	Aquatic invertebrate assemblages in streams surveyed are generally low in diversity of species and numbers.	Low/District

1.6 Key Parameters for Assessment

Maximum Design Scenario

1.6.1 The maximum design scenarios identified in **Table 1.13** have been selected as those potentially resulting in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project Description, of the PEIR. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (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.

Table 1.13: Maximum design scenario considered for the assessment of potential impacts

Potential 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. • Temporary converter site construction compound is 20,000 m^2 (additional to permanent footprint of buildings). • Duration of construction would be 72 months (split across both phases of programme). **AC Cables Connection** • Open cut trenching: The maximum number of trenches would be four, with an approximate depth of 1.4 m. • Construction corridor width of 65 m, with a length of up to 1.2 km. **Alverdiscott Substation Connection Development** • Footprint of the substation would be 28,000 m^2. • There would be potential diversions of existing 132 kV and 11 kV overhead lines. **Onshore HVDC Cables** • 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	Maximum areas proposed for construction, operation and maintenance, and decommissioning. This includes the largest permanent footprint for the Converter Stations and substation, 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).	✓	✓	✓		

Potential Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				excavated- for each joint bay and link box, respectively. • The working area will include a construction corridor width of 65 m, with a length of up to 14.5 km. Duration of up to 36 months. • The maximum number of HDD locations is eight. 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. **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 an indicative 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 12 months in phase 1 and 6 months in phase 2. • HDD will pass beneath the designated site, Mermaid's Pool to Rowden Gut SSSI. **Highway Improvements** • Selective widening of Gammaton Road	

Potential Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				• 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. • Creation of accesses to Onshore HVDC Cable Corridor 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. **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 of improved grassland and arable land as a result of construction of Converter site	✓	✓	×	**Construction phase** Up to 32 ha of habitat loss/disturbance due to: • Earthworks to establish development platforms, screening bunds and export of surplus material. • construction of converter stations and other infrastructure at the Converter Site; and	Maximum areas proposed for construction and operation. Habitats affected include arable and improved grass leys and permanent removal of hedgerows. Habitats may support protected species such as

Potential Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				• creation of construction compound. The Converter Site area is up to 320,000 m^2, including space for landscaping, compound, drainage and the converter buildings. Temporary converter site construction compound is 20,000 m^2 (additional to permanent footprint of buildings).Duration of construction would be 72 months (split across both phases of programme).	breeding birds, bat flight lines, dormice, badgers and reptiles.
				Operation and Maintenance phase • Operation and maintenance will mean that the converter station site will not be available for use by wildlife for duration of operational period. • Combined footprint of the two converter stations is 130,000 m^2, including two converter hall buildings.	
				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 of HVDC and HVAC cable corridors	✓	×	×	**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. Specifically, the following parameters would represent the MDS for the construction of the HVAC and HVDC cable corridors: • Onshore HVDC Cables	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 hedgerows topic below). Habitats affected have potential to support breeding birds and reptiles.

Potential Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				– 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 width of 65 m, with a length of up to 14.5 km. Duration of up to 36 months. – HDD locations is eight. 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. – 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 in phase 1 and 12 months in phase 2.	
				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.	

Potential Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
				Decommissioning Decommissioning of cable routes have not been considered as they are expected to have a lifespan greatly exceeding that of the converter stations.	
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 Lane) - 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 site 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.	
				De-commissioning Decommissioning of landfall site has not been considered as it is expected to have a lifespan greatly exceeding that of the converter stations. Decommissioning of other compounds has not been considered, although 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 of HVDC	✓	×	×	**Construction phase** Temporary loss of small sections of hedgerow as a result of:	This assessment assumes that hedgerow crossings will be reduced in width at all locations to a maximum width of 15 m

Potential Impact	Phase[1]			Maximum Design Scenario	Justification
	C	O	D		
and HVAC cable routes and provision of road widening measures along Gammaton Lane				• Cable route crossings along entire length of cable routes (16.2 km for HVDC and HVAC combined) X km hedge removal associated with surface access works: • Selective widening of Gammaton Road • 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. • 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.	(whereas it is expected that hedgerow crossings may be achieved with a gap of closer to 10 m). 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.	
				Decommissioning Decommissioning of cable routes have not been considered as they are expected to have a lifespan greatly exceeding that of the converter stations. Decommissioning of surface access works is not considered as these are intended to be permanent works.	

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

1.7 Mitigation Measures Adopted as Part of the Proposed Development

1.7.1 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 within Volume 1, Appendix 3.1: Draft Mitigation Schedule, of the PEIR.

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

1.7.2 In addition, where relevant, measures have been identified that may result in enhancement of environmental conditions. Such measures are clearly identified within the draft mitigation schedule (see Volume 1, Appendix 3.1: Draft Mitigation Schedule, of the PEIR). The measures relevant to this chapter are summarised in **Table 1.14**.

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

Measure Adopted	How the Measure Will be Secured
Primary mitigation	
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 include the following: • the avoidance of Important Ecological Receptors; • 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);	Proposed Development design to be provided and approved as part of the DCO.

Measure Adopted	How the Measure Will be Secured
• compensation for unavoidable impacts (e.g. full like-for-like replacement of hedgerows impacted by corridor); and • compensation and enhancement, including Biodiversity Net Gain.	
The site selection process for the Proposed Development has considered the locations of statutory and non-statutory designated ecological sites, which have been directly avoided, where practicable. Where possible, unprotected areas of woodland, mature and protected trees (i.e. veteran trees), as well as other ecologically sensitive habitats have and will also be avoided.	Proposed Development design to be provided and approved as part of the DCO.
The following features are proposed to be crossed by Horizontal Directional Drilling (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). – Littleham Wood, situated to the west of Robin Hill Farm and approximately 800 m to the north west of Littleham. • A site of suspected archaeological assets at Winscott Barton. • There is a potential option to HDD at land to the west of Abbotsham, prior to the A39 crossing.	Proposed Development design to be provided and approved as part of the DCO.
Horizontal Directional Drilling (or other trenchless methodologies) would be utilised to allow the Onshore HVDC Cable Corridor to pass beneath the River Torridge, which is designated as a Local Nature Reserve (Kynoch's Foreshore) and County Wildlife Site at the crossing location. At this location, the HVDC Cables will pass beneath the river, its floodplain, the Tarka Trail and Lodge Plantation Unconfirmed Wildlife Site. Construction working areas associated with the River Torridge Crossing would be located outside of any designated areas.	Proposed Development design to be provided and approved as part of the DCO.

Measure Adopted	How the Measure Will be Secured
Where practicable, the construction swathe has been reduced in width where the cables, haul road and site accesses are required to cross hedgerows, which are an important resource and potentially support considerable amounts of wildlife such as dormice, bats and breeding birds. This would limit the width of hedge to be removed. Methods of clearance will be implemented to further minimise impacts on these groups, such as considering timings of clearance to avoid specific impacts.	Proposed Development design to be provided and approved as part of the DCO.
In all instances where hedgerows are crossed by the Onshore HVDC Cable Corridor, the hedgerows will be reinstated on a 'like-for-like' basis. Where feasible, hedgerow bank materials will be stored and re-used to form the reinstated banks for hedgerows, including viable woody species stools. Hedgerow reinstatement will include replanting with suitable species mixes tailored to replicate and enhance the diversity of the existing hedgerows, using appropriate native species of local provenance. A suitably experienced hedging contractor familiar with creation of Devon hedgerows will be appointed to complete this work.	Proposed Development design to be provided and approved as part of the DCO.
Agricultural habitats, such as improved and semi-improved grassland and arable land, would be reinstated after construction of the Onshore HVDC Cable Corridor. 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.	Proposed Development design to be provided and approved as part of the DCO.
Where hedgerow habitat removal is unavoidable, impacts would be reduced as far as possible by reducing the sizes of gaps in hedgerows or other features of value and, if possible, utilising existing gaps and gateways.	Proposed Development design to be provided and approved as part of the DCO.
Where practicable, the cable route has avoided a habitat of significant value to otters. However, the route would pass through some areas of suitable habitat and cross several watercourses. Where the cable route crosses the River Torridge, HDD would reduce the potential impact as far as possible by passing under the river and associated terrestrial habitats. Construction work sites, including HDD and other tunnelling compounds, would be located a suitable distance away from areas of habitat of high potential value to otters to minimise disturbance levels.	Proposed Development design to be provided and approved as part of the DCO.
Secondary mitigation	
A Landscape and Ecological Management Plan (LEMP) would be developed in accordance with the Outline Landscape and Ecological Management Plan (OLEMP). The OLEMP will be submitted as part of the application for the development consent and will include requirements and measures relating	Outline LEMP with final application to be provided and approved as part of the DCO.

Measure Adopted	How the Measure Will be Secured
to ecology and nature conservation. It will include but not be limited to the following: • a series of pre-commencement ecological surveys, to understand conditions prior to construction (this provides an opportunity to address any changes prior to any works). • requirements and management measures relating to ecology and nature conservation. • methodologies required for removal and reinstatement of hedgerows or other habitats to be reinstated. • methods required to prevent disturbance to or to comply with protected species licensing as relating to dormice (or any other species found to require licensing as a result of pre-commencement surveys). • details and specifications for an Ecological Clerk of Works, including duties, responsibilities and reporting structure.	
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.	Measures to be set out in Outline Onshore CEMP to be provided and approved as part of the DCO.
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.	Licensing not currently identified as necessary, but to be reviewed and sought if required due to changes in baseline as a result of further surveys prior to commencement of construction. Details of decision path for need of licensing to be set out in the LEMP to be provided and approved as part of the DCO.
Clearance of habitats identified as being of potential value to birds for nesting would be undertaken outside of the bird nesting season, where possible. This would include hedgerow and scrub habitats, grassland or other habitats suitable for ground nesting bird species. Should some clearance be required outside this period, the relevant areas would be inspected by an Ecological Clerk of Works to check for the presence of nesting birds prior to any site clearance. In the event nests were found, works would avoid the area of the nest until all nestling birds have fledged. Following removal and works, habitat reinstatement would be carried out to renewed opportunities for bird nesting, once re-established.	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.
Measures to prevent disturbance to birds using particularly important features such as the landfall site and Torridge Estuary would be put in place. This would include the erection of temporary visual/sound	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.

Measure Adopted	How the Measure Will be Secured
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 by wintering birds, works would be timed to avoid the period when they are present (November to February inclusive).	
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, where they would remain until construction is complete with habitat reinstatement. Details and methodologies will be included within the Outline Onshore CEMP, which will be submitted with the application for development consent.	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.
A dedicated and suitably qualified Ecological Clerk of Works (ECoW) for the Proposed Development will be employed to ensure that construction activities comply with the Onshore CEMP.	Detailed requirements for ECoW to be set out in Outline Onshore CEMP/LEMP to be provided and approved as part of the DCO.
An Outline Onshore Construction Environmental Management Plan (CEMP) will be prepared and submitted with the application for development consent. A final Onshore CEMP will be developed in accordance with the Outline Onshore CEMP. The final Onshore CEMP would include industry good practice measures to ensure dust suppression and prevention of contaminated water run-off from all construction areas. It would also set out any specific measures required during construction for the protection and mitigation of effects on retained habitats and features, protected or otherwise notable species and any other requirements such as species licensing, if required.	Outline Onshore CEMP with final application to be provided and approved as part of the DCO.
A detailed Biosecurity Protocol in will be developed in accordance with the Outline Biosecurity Protocol, which will be submitted with the application for development consent. The Biosecurity Protocol will contain measures to the limit spread and/or introduction of Invasive Non-Native Species during construction.	Outline Biosecurity Protocol to be included as part of the Outline Onshore CEMP, which will be secured as a requirement of the DCO.
In relation to dormice, details and methodologies for hedgerow removal will be included within the Outline Onshore CEMP to be submitted with the DCO. These measures will be followed in instances where the creation of gaps in hedgerows are necessary. These include but are not limited to: • 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	Detailed requirements set out in Outline Onshore CEMP/LEMP to be provided and approved as part of the DCO.

Measure Adopted	How the Measure Will be Secured
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 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. • Once the construction phase is completed, the reinstatement and enhancement of any dormouse habitat would be undertaken.	
A licence under Regulation 53 of the Conservation of Habitats and Species Regulations 2017 (as amended) would be required from Natural England prior to the commencement of construction. 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.	Draft dormouse license application to be included with final application to be provided and approved as part of the DCO.
In order to minimise potential disturbance to otters, compounds adjacent to watercourses will be screened with solid fencing on sides adjacent to the watercourse, and a review of any working lighting will be undertaken to ensure that light spill does not fall onto currently unlit sections of watercourse during the construction period.	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.
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, measures for their protection would be agreed upon with Natural England.	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.
For hedgerows known to be used by high numbers of bats or rarer species, temporary structures would be used to replicate the linear feature's canopy and left in place overnight during the construction activity. These would be formed of suitable materials such as 'Heras' fencing panels adorned with camouflage netting and stoutly anchored to the ground. 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	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.

Measure Adopted	How the Measure Will be Secured
winter period (November to February inclusive) when bats are inactive.	
A single tree with a roost used by small numbers of soprano pipistrelles has been identified adjacent to the HDD work site situated to the south west of the Torridge Estuary. Measures to reduce disturbance to this roost will be included within the Outline Onshore CEMP to be submitted with the application for development consent. Measures would include but not be limited to: • fencing around the HDD work site to control lighting and disturbance. • directional lighting to avoid light spillage. • Artificial bat roosting facilities would be provided in alternative trees (i.e. five bat boxes are proposed to provide alternative roosting possibilities close to the existing roost, based upon survey observation, and within the flight route of bats using the affected roost). This approach would be taken for any other roosts identified in previously un-surveyed locations or during pre-commencement surveys."	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.
Measures to ensure that construction works are carried out in a tidy fashion, with good standards of handling sensitive materials, would prevent access 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 from becoming trapped in deep excavations. These measures would be set out in the Outline Onshore CEMP and Outline LEMP.	Detailed requirements set out in Onshore CEMP/LEMP to be provided and approved as part of the DCO.
Tertiary	
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 no suitable alternative to works would affect such a holt or place of rest, a Natural England development licence for otters would be required before works can commence.	Licensing not currently identified as necessary, but to be reviewed and sought if required due to changes in baseline as a result of further surveys prior to commencement of construction. Details of decision path for need of licensing to be set out in the LEMP to be provided and approved as part of the DCO.
Where roosts are identified in locations which would require their destruction, damage, or where effective prevention of disturbance could not be ensured, licensing under Regulation 53 of the Conservation of Habitats and Species Regulations 2017 (as amended) would be required from Natural England. However, based on the current understanding of the Proposed Development, it is not likely to be required.	Licensing not currently identified as necessary, but to be reviewed and sought if required due to changes in baseline as a result of further surveys prior to commencement of construction. Details of decision path for need of licensing to be set out in the LEMP to be provided and approved as part of the DCO.
Although no active badger setts have so far been identified, activity along the Onshore HVDC Cable	Licensing not currently identified as necessary, but to be reviewed and sought if required due to

Measure Adopted	How the Measure Will be Secured
Corridor would be subject to continued monitoring on a four monthly 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.	changes in baseline as a result of further surveys prior to commencement of construction. Details of decision path for need of licensing to be set out in the LEMP to be provided and approved as part of the DCO.
Enhancement	
The Proposed Development will include a detailed landscape design scheme, which will be provided within the Outline Landscape Management Plan. 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. This will incorporate enhancements to an existing small water-course. Additional hedgerow will be created to form rational field boundaries and provide increased connectivity into the existing hedgerow network which exists in the area.	Outline Landscape Management Plan to be provided as part of application for development consent.
The Proposed Development will commit to providing a greater than 10% net gain, measured using the Statutory Biodiversity Metric.	Final Proposed Development design to be provided and approved as part of the DCO

1.8 Preliminary Assessment of Construction Effects

1.8.1 The impacts of the construction of the Proposed Development have been assessed. The potential impacts arising from the construction phase of the Proposed Development are listed in **Table 1.16**, along with the maximum design scenario against which each impact has been assessed.

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

Statutory Designated Sites

1.8.3 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, to a lesser extent, the Mermaid's Pool to Rowden Gut SSSI on the coast at the landfall site.

1.8.4 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, Hydrogeology, Geology and Ground Conditions of the PEIR. This topic is not considered further in this Chapter.

1.8.5 There is also some potential for disturbance to species, such as migratory and wintering birds, which use the areas off the landfall site and the estuary at Kynoch's Foreshore. However, levels of use by these species at these locations

have been found during surveys (see Volume 2, Appendix 1.8: Breeding, Wintering and Migratory Bird Survey of the PEIR) to be not particularly high.

Sensitivity of the Receptor

1.8.6 Statutory designated sites are assessed as of **High/National** sensitivity.

Magnitude of Impact

1.8.7 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 CEMP) included with the scheme is not properly implemented or adhered to.

1.8.8 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 site and the Tarka Trail footpath and cycle track running along the Torridge Estuary.

1.8.9 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.

1.8.10 The effects discussed above are considered as follows:

- the impacts are indirect;
- the impact is long term (assuming maximum seven years construction period);
- the impact is likely to be intermittent; and
- the overall magnitude of the impact is Low Adverse.

1.8.11 The impact is predicted to be of local spatial extent and long term duration. The magnitude is, therefore, **Low**.

Significance of the Effect

1.8.12 Considering the mitigation measures adopted as part of the project, 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.

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

Further Mitigation

1.8.14 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.

1.8.15 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.

Locally Designated Sites

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

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

1.8.18 The scheme design would avoid direct impacts of habitat loss from the designated sites as the HDD compound at landfall would be located in a way to avoid the unimproved grassland habitats, coastal grassland and scrub habitats comprising the Abbottsham 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.

1.8.19 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

1.8.20 Locally designated sites are assessed as of **Medium/County** sensitivity.

Magnitude of Impact

1.8.21 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 CEMP) included with the scheme is not properly implemented or adhered to.

1.8.22 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 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 site and the Tarka Trail footpath and cycle track running along the Torridge Estuary.

1.8.23 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.

1.8.24 The effects discussed above are considered as follows:

- the impacts are indirect;

- the impact is long term (assuming maximum seven years construction period);
- the impact is likely to be intermittent; and
- the overall magnitude of the impact is Low Adverse.

1.8.25 The impact is predicted to be of local spatial extent and long term duration. The magnitude is, therefore, **Low**.

Significance of the Effect

1.8.26 Taking into account the mitigation measures adopted as part of the project, the significance of effects of potential contamination on adjacent sites (such as Abbottsham Cliff CWS or Torridge Estuary CWS) or contamination and disturbance on distant sites would be Low Adverse.

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

Further Mitigation

1.8.28 No additional mitigation is proposed specifically in relation to the locally-designated sites, in addition to the screening measures referred to in 1.8.14 above.

1.8.29 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.

Devon Hedgerows

1.8.30 Direct effects on Devon hedgerows as a result of the construction of the cable route and converter station. 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. Construction of the Converter site would result in permanent loss of one hedgerow.

1.8.31 Gaps in hedgerows would be reinstated on a like-for-like basis, and additional hedgerow will be created as part of the BNG habitat creation package for the scheme.

Sensitivity of the Receptor

1.8.32 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.

1.8.33 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;

- Under careful management, hedgerows are able to recover reasonably quickly, and while gaps may take some time to regain a full species complement, they are likely to recover their connective value relatively quickly; and
- Therefore the overall sensitivity and value of Devon hedges is considered to be of Medium/County level.

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

Magnitude of Impact

1.8.35 The construction of the Onshore HVDC Cable Corridor inclusive of construction compounds and temporary access arrangements would result in the temporary loss of Devon hedgerow. Road widening would also result in temporary loss of Devon hedgerow. The construction of the Converter Site and Alverdiscott Substation Connection Development would result in the permanent loss of hedgerow.

1.8.36 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 as part of BNG landscape scheme);
- construction impacts are considered to be long term as construction programme is up to seven years;
- the temporary loss of hedgerow resulting from the cable route and access improvement works would generally be intermittent; and
- the overall magnitude of the impact is Medium adverse.

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

Significance of the Effect

1.8.38 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.

1.8.39 Overall, the magnitude of the impact is Medium and the sensitivity of the receptor is Medium/County. The effect will, therefore, be of **Moderate adverse** significance, which is significant.

Further Mitigation

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

Streams with Wooded Banks

1.8.41 Streams with wooded banks are an important ecological feature which will be crossed by the Onshore HVDC Cable Corridor within the Onshore Infrastructure Area. These occur at Kenwith Stream, north of Abbottsham, Littleham Wood, west of West Ashridge Farm both north of Littleham (see Appendix 1.1) and the southern boundary of the Converter Site. In these cases stream crossings will be completed using methods to minimise impacts on the streams themselves and the bank-side vegetation.

1.8.42 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 Littleham Wood and 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.

1.8.43 Surface crossings of streams may occur at 2 minor tributaries to Jennetts reservoir and a watercourse forming the boundary of the Converter Site.

1.8.44 Potential indirect effects on streams with wooded banks remain as a result of contamination events (by air or water) and possible disturbance.

Sensitivity of the Receptor

1.8.45 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.

1.8.46 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 water-courses 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
- therefore the overall sensitivity and value of streams with wooded banks is assessed as of Medium/County sensitivity.

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

Magnitude of Impact

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

1.8.49 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.

1.8.50 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 2 minor tributaries to Jennetts reservoir which are crossed at surface;
- direct and indirect effects on the watercourse forming the southern boundary of the Converter Site which may be either crossed at surface or HDD;
- the impacts are considered long term due to the seven year construction programme;
- the impact is likely to be intermittent; and
- the overall magnitude of the impact is likely to be Low Adverse.

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

Significance of the Effect

1.8.52 Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary habitat loss, potential for contamination and disturbance to streams with wooded banks would be Minor Adverse.

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

Further Mitigation

1.8.54 No additional mitigation is proposed specifically in relation to the streams with wooded banks, in addition to the screening measures referred to in 1.8.14 above, which should reduce the impact of disturbance on wooded watercourses.

1.8.55 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.

Improved Grasslands and Arable Leys

1.8.56 Improved grasslands and arable leys lie all 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 PEIR).

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

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

Sensitivity of the Receptor

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

1.8.60 Improved grassland and arable 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.

1.8.61 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;
- they are easily and quickly replicated using simple reseeding techniques; and
- therefore the overall sensitivity and value of the receptor of improved grassland and arable leys is assessed as of Negligible/Parish sensitivity.

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

Magnitude of Impact

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

1.8.64 There will also be a direct permanent loss associated with the construction of the Converter Site, Alverdiscott Substation Connection Development, and road widening.

1.8.65 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;
- the impact is likely to be continuous for the duration of the construction period; and
- therefore the overall magnitude of the impact is High Adverse.

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

Significance of the Effect

1.8.67 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 would be Minor Adverse.

1.8.68 Overall, the magnitude of the impact is High and the sensitivity of the receptor is Negligible/Parish. The effect will, therefore, be of **Minor adverse** significance, which is not significant.

Further Mitigation

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

Species-Poor Semi-Improved Grassland

1.8.70 Species-poor semi-improved grassland occurs in a few small pockets along the Onshore HVDC Cable Corridor of the Proposed Development (see Appendix 1.1).

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

Sensitivity of the Receptor

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

1.8.73 Species-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. Suppose no additional management to improve the grassland further occurs. In that case, they may also increase in species diversity, improving the value of the habitat both intrinsically and for groups such as invertebrates.

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

- these habitats are widespread and common in the region;
- they can be replicated using simple reseeding techniques; and
- therefore the overall sensitivity and value of the receptor of species-poor semi-improved grassland is assessed as of Low/Local sensitivity.

1.8.75 The sensitivity of species-poor semi-improved grassland in locations affected by the Onshore Infrastructure Area is **Low/Local**.

Magnitude of Impact

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

1.8.77 This would result in the following:

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

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

Significance of the Effect

1.8.79 Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary and permanent habitat loss of species-poor semi-improved grassland would be **Minor Adverse**.

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

Further Mitigation

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

Arable Cropland

1.8.82 Arable croplands occur along the Onshore HVDC Cable Corridor and parts of the Converter site as part of the Proposed Development (see Appendix 1.1).

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

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

Sensitivity of the Receptor

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

1.8.86 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.

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

- these habitats are extremely widespread and common in the region;
- they are easily and quickly replicated using simple reseeding techniques; and
- therefore the overall sensitivity and value of the receptor of arable cropland is assessed as of Negligible/Parish sensitivity.

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

Magnitude of Impact

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

1.8.90 There will also be a direct permanent loss as a result of the construction of the Converter Site, Alverdiscott Substation Connection Development and road widening exercise.

1.8.91 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;
- the impact is likely to be continuous for the duration of the construction period; and
- therefore the overall magnitude of the impact is High Adverse.

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

Significance of the Effect

1.8.93 Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary and permanent habitat loss of arable cropland would be **Minor Adverse**.

1.8.94 Overall, the magnitude of the impact is High and the sensitivity of the receptor is Negligible/Parish. The effect will, therefore, be of **Minor adverse** significance, which is not significant.

Further Mitigation

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

Dormice

1.8.96 Dormice have been identified in hedgerows at a number of locations along the cable route of the Proposed Development so far (see Appendix 1.3). Given the similarity of hedgerow habitats present along the entire length of the proposed development, and their inter-connected nature, it is difficult to categorically exclude the presence of dormice at any location along the cable routes, construction compounds, road access modifications, or Converter site.

Sensitivity of the Receptor

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

1.8.98 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.

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

- the declining national population of dormice, but also understanding their relative frequency in Devon;

- their recorded difficulty in adapting to relatively small losses of habitat, particularly in linear features where breaks may result in severance of connectivity; and
- therefore the overall sensitivity and value of dormice is assessed as Medium/Regional sensitivity.

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

Magnitude of Impact

1.8.101 The Proposed Development will result in temporary damage (gaps) in hedgerows, as a consequence of the Onshore HVDC Cable Corridor inclusive of temporary access arrangements.

1.8.102 It will also result in the permanent loss of hedgerow at the Converter Site and Alverdiscott Substation Site. A further loss of hedgerow will occur because of widened / realigned public roads many of which will be replaced.

1.8.103 This would result in the following:

- direct permanent habitat loss;
- temporary loss which would still be considered long term due to the seven year construction programme;
- the impacts are mainly intermittent across the countryside, although factors such as severance must also be considered; and
- therefore the overall magnitude of the impact is Medium Adverse.

1.8.104 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **Medium Adverse**.

Significance of the Effect

1.8.105 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**.

1.8.106 Overall, the magnitude of the impact is Medium and the sensitivity of the receptor is Medium/Regional. The effect will, therefore, be of **Moderate adverse** significance, which is significant.

Further Mitigation

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

Otters

1.8.108 Otters are well known to inhabit the Taw/Torridge catchments, and the area has been considered a “stronghold” of otter population even during the past when otters had declined in most parts of the country. The surveys (see Appendix1.6) have identified the presence of otters in areas close to the Proposed Development, and the scheme passes over a number of features likely to be used

by otters, such as the Torridge Estuary itself, and also smaller water-courses such as the Kenwith stream and the two wooded watercourses north of Littleham.

1.8.109 No evidence of places of rest have so far been identified in locations which would be affected by the Proposed Development. However, otters are a mobile species with very large home ranges, and it is possible that such places of rest could be used in advance of commencement of construction.

Sensitivity of the Receptor

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

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

1.8.112 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) which may be affected by the Proposed Development;
- otter populations are more robust than in the past; and
- therefore the overall sensitivity and value of otters is assessed as of Medium/Regional sensitivity.

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

Magnitude of Impact

1.8.114 The Proposed Development cable route will cross three streams or rivers likely to be used by otters (Kenwith stream, two watercourses north of Littleham and the Torridge Estuary). Proposals to cross the estuary and wooded watercourses by HDD would reduce possibility of direct impacts on habitats likely to be used by otters, although they could result in some disturbance, particularly to any places of rest, should they be put into use by otters prior to commencement of construction. There are currently no otter places of rest in locations which would be affected by the Proposed Development.

1.8.115 This would 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 long term, given the seen year construction programme;
- it is likely that such works at water-courses would be intermittent in nature; and
- therefore the overall magnitude of the impact on otters is assessed as Low Adverse.

1.8.116 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **Low Adverse**.

Significance of the Effect

1.8.117 Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary disturbance to habitat features of value for otters would be **Minor Adverse**.

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

Further Mitigation

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

Bats

1.8.120 Bats utilise most areas affected by the Proposed Development, in particular hedgerows are likely to offer foraging and migration flightlines, with mature trees also potentially offering opportunities for bats to roost.

1.8.121 The reduction in width of the cable route as it passes through hedgerows will reduce potential for bats to stop using them for these activities. Where construction compounds are to be located for the Proposed Development, there is also the possibility of indirect impacts such as disturbance, particularly as a result of construction noise close to trees supporting bat roosts, or where temporary construction lighting spills onto hedgerows or other features used as flightlines, particularly for more light-sensitive bat species.

Sensitivity of the Receptor

1.8.122 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.

1.8.123 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 are most at risk from potential impacts from development.

1.8.124 Bat species identified during the bat surveys so far undertaken (see Appendices 1.4 and 1.5) include considerable number of more common species such as common pipistrelle, with evidence of some use of specific areas by less common and geographically restricted, light-sensitive species such as western barbastelle and greater and lesser horseshoe bats. These bats were identified in lower numbers during the surveys, suggesting the areas reviewed were not of particularly high value as commuting or foraging areas.

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

- the rarity and geographical extent of the species identified;
- the levels of activity identified at locations to be affected by the Proposed Development;
- the likelihood of damage to existing populations; and

- therefore the overall sensitivity and value of bats is assessed as Medium/Regional.

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

Magnitude of Impact

1.8.127 The survey undertaken so far indicates that the Proposed Development will potentially directly affect 15 trees with moderate bat roosting potential and one tree with high roosting potential. This effect would be either by removal of the tree, or most likely by disturbing construction activity close to the tree.

1.8.128 It should be noted that the assessment of trees for bat roosting is based on the understanding of the scheme design in place at time of survey, and subject to access restrictions as are all other ecological surveys.

1.8.129 Levels of direct impact to bat flightlines along hedgerows severed by the cable route are unlikely to be particularly severe, due to the intended reduction on width of cable route through hedgerows.

1.8.130 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 CEMP.

1.8.131 The impacts identified above would result in the following:

- direct impacts on up to 16 trees with potential to support bat roosts;
- indirect impacts from disturbance to habitat features used by bats as a result of construction activities;
- these impacts would be long term as a result of the seven year construction programme;
- the impacts are likely to be intermittent in nature; and
- therefore the overall magnitude of the impact on bats is assessed as Medium Adverse.

1.8.132 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **Medium Adverse**.

Significance of the Effect

1.8.133 Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary disturbance and potential loss of trees with potential for bat roosting would be Moderate Adverse.

1.8.134 As the evidence base is insufficiently complete at this stage to ensure that all potential impacts have been completely identified, it is appropriate to assign a level of confidence to the assessment. For the reasons discussed at section 1.8.127 above, there is a level of uncertainty attached to this level of significance. This uncertainty has been addressed through the adoption of precautionary thresholds.

1.8.135 Overall, the magnitude of the impact is Medium, and the sensitivity of the receptor is Medium/Regional. The effect will, therefore, be of **Moderate Adverse significance**, which is significant.

Further Mitigation

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

Badgers

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

1.8.138 Badgers are common in many parts of Devon, although populations may be affected locally by licensed culling brought about in order to prevent the spread of Bovine Tuberculosis in cattle.

1.8.139 Based on survey results undertaken so far, this appears to be the case for areas which would be affected by the Proposed Development (see Appendix 1.7). No badger setts and little evidence of badger activity have been identified along the cable route of the Proposed Development. Based on current understanding of badger activity, there would be no direct or indirect impacts on badgers because of the Proposed Development.

1.8.140 However, badgers are a mobile and active species, and it is possible that badgers may reinhabit and create new setts in locations which would be affected by the Proposed Development prior to commencement of construction. Therefore following the precautionary approach required at this stage, a consideration of potential impacts has been undertaken.

Sensitivity of the Receptor

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

1.8.142 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.

1.8.143 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;
- they are subject to territorial behaviour, tending to live in social groups defending a clearly defined territory, which may vary naturally as groups expand or contract; and
- therefore, the overall sensitivity and value of badgers is assessed as Negligible/Parish.

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

Magnitude of Impact

1.8.145 Current survey results indicate that no effects would occur to badgers from the Proposed Development, as no badger setts have been identified in positions which would be disturbed or damaged by the construction work. However, it is possible that badgers could occupy locations which could be affected prior to commencement of construction, and it is this eventuality which is assessed here.

1.8.146 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.

1.8.147 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 seven year construction programme;
- this impact would be continuous as it would result in the need to close the sett under licence (dependent on hypothetical sett location); and
- therefore in that scenario, the overall magnitude of the impact on badgers would be Medium Adverse.

1.8.148 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

1.8.149 Taking into account the mitigation measures adopted as part of the project, the significance of effects of disturbance and potential damage to occupied badger setts would be **Minor Adverse**.

1.8.150 Overall, the magnitude of the impact is Medium, and the sensitivity of the receptor is Negligible/Parish. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

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

Breeding Birds

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

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

1.8.154 There will be temporary loss of hedgerow, grassland and cropland habitats as a result of the Proposed Development cable route and permanent loss as a result of the construction of the converter station and road access modifications.

Sensitivity of the Receptor

1.8.155 The breeding bird survey indicates that the assemblage identified along the cable route are generally of common species, predominantly utilising hedgerow habitats, although some ground nesting species were also present.

1.8.156 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;
- the availability of alternative appropriate habitats which would remain available to the species, maintaining their current breeding success; and
- therefore the overall sensitivity and value of breeding birds is assessed as Medium/County.

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

Magnitude of Impact

1.8.158 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.

1.8.159 The construction of the Converter Site, Alverdiscott Substation Development and road improvements would result in permanent loss of hedgerow, grassland and arable cropland.

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

1.8.161 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 seven year construction programme, or permanent in relation to those habitats permanently affected;
- it is likely that the temporary impacts would be intermittent; and
- therefore the overall magnitude of the impact on breeding birds is assessed as Low Adverse.

1.8.162 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **Low Adverse**.

Significance of the Effect

1.8.163 Taking into account the mitigation measures adopted as part of the project, the significance of effects of temporary and permanent habitat loss and disturbance to breeding birds would be Minor Adverse.

1.8.164 Overall, the magnitude of the impact is Low Adverse, and the sensitivity of the receptor is Medium/County. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

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

Wintering and Migratory Birds

1.8.166 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 Proposed Development Draft Order Limits.

1.8.167 The wintering and migratory bird survey (see Appendix1.8) found that lands at the landfall and around the estuary crossing locations which could be affected by the Proposed Development did not provide important roosting areas at high tide.

Sensitivity of the Receptor

1.8.168 Wintering and migratory birds are an important resource in this part of Devon. The wintering bird surveys identified 12 species of conservation importance at the landfall area and 13 species of conservation importance using the estuary areas, although neither area was important for high tide roosting.

1.8.169 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;
- the availability of alternative appropriate habitats which would remain available to the species, maintaining their current population levels in these locations; and
- therefore the overall sensitivity and value of wintering and migratory birds is assessed as Medium/County.

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

Magnitude of Impact

1.8.171 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.

1.8.172 There is some potential for disturbance during construction activity, particularly at landfall and estuary crossing sites (both to consist of HDD compounds).

1.8.173 The impacts identified would result in the following:

- indirect potential disturbance effects;
- these would be long term as a result of the seven year construction programme;
- the disturbance is likely to be intermittent over that period; and
- therefore, the overall magnitude of the impact is Low Adverse.

1.8.174 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **Low Adverse**.

Significance of the Effect

1.8.175 Taking into account the mitigation measures adopted as part of the project, the significance of effects of disturbance to wintering and migratory birds would be Minor Adverse.

1.8.176 Overall, the magnitude of the impact is Low Adverse, and the sensitivity of the receptor is Medium/County. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

1.8.177 No additional mitigation is proposed specifically in relation to wintering and migratory birds, in addition to the screening measures referred to above.

1.8.178 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.

Reptiles

1.8.179 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).

1.8.180 There are locations identified along the cable route of the Proposed Development where there will be some habitat damage and disturbance which could affect reptiles, with a risk of injury to individuals.

Sensitivity of the Receptor

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

1.8.182 Small numbers of reptiles have been identified in locations which would be affected by the Proposed Development. It is possible that other populations occur in areas which have not yet been surveyed.

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

- the low numbers 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.

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

Magnitude of Impact

1.8.185 The Proposed Development will result in the temporary damage of habitat likely to support reptiles of habitat permanently lost as a result of the construction of the Converter site.

1.8.186 In addition to the habitat loss, there is also a risk of injury to individuals as a result of construction activity, unless a suitable scheme is implemented for the removal of reptiles to safe locations during this activity.

1.8.187 There may also be disturbance to adjacent areas supporting reptiles as a result of construction activity.

1.8.188 The impacts identified would result in the following:

- direct loss of habitat;
- direct risk of injury to individuals;
- indirect disturbance to adjacent areas;
- this effect is considered long term, taking into account the seven year construction programme;
- over the construction period, the effect is likely to be intermittent; and
- therefore, the overall magnitude of the impact is High Adverse.

1.8.189 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **High Adverse**.

Significance of the Effect

1.8.190 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 Moderate Adverse.

1.8.191 Overall, the magnitude of the impact is High Adverse, and the sensitivity of the receptor is Low/District. The effect would, therefore, be of **Moderate Adverse** significance, which is not significant.

Further Mitigation

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

Aquatic Invertebrates

1.8.193 Aquatic invertebrates in the Kenwith Stream (referred to as Rickards Down Stream in the survey report, Appendix 1.10 of this PEIR) 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.

1.8.194 Potential for impacts on aquatic invertebrate could occur as a result of direct damage to streams if crossings not using HDD methods undertaken.

1.8.195 Indirect impacts could occur as a result of construction contamination events, if CEMP measures not implemented correctly.

Sensitivity of the Receptor

1.8.196 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.

1.8.197 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 potential for significant damage to each assemblage, including its likely recovery success; and
- therefore, the overall sensitivity and value of aquatic invertebrates is assessed as Low/District.

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

Magnitude of Impact

1.8.199 Crossings at Kenwith Stream, Littleham Wood, west of West Ashridge Farm and potentially at the Converter Site's southern boundary are to be completed by HDD and there are unlikely to be any direct effects on stream habitats as a result.

1.8.200 At those locations there is a risk of indirect impacts on the streams as a result of construction contamination incidents if CEMP measures are not fully implemented.

1.8.201 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 seven year construction programme;
- the impacts are likely to be intermittent over the construction period; and
- therefore, the overall magnitude of the impacts on aquatic invertebrates is Medium Adverse.

1.8.202 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **Medium Adverse**.

Significance of the effect

1.8.203 Taking into account the mitigation measures adopted as part of the project, the significance of effects of habitat loss, and potential construction contamination issues to aquatic invertebrates would be **Minor Adverse**.

1.8.204 Overall, the magnitude of the impact is Medium Adverse, and the sensitivity of the receptor is Low/District. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

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

1.8.206 The impacts of the construction of the Proposed Development have been assessed. The potential impacts arising from the construction phase of the Proposed Development are listed in **Table 1.16**, along with the maximum design scenario against which each impact has been assessed.

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

Future Monitoring

1.8.208 Monitoring post construction will be necessary to ensure wildlife populations affected by the Proposed Development remain present and viable. Monitoring of protected species affected by the Proposed Development will be set out in any licence application method statement required, or where licensing is not required (such as with protected common reptiles) within the LEMP document.

1.8.209 Monitoring of habitats created for BNG and or other mitigation will also require monitoring. The BNG metric and instructions indicate monitoring requirements to ensure habitats created reach and maintain their required condition assessment. Details of all habitat monitoring requirements will be set out in the LEMP document.

1.9 Assessment of Operational Effects

1.9.1 The impacts of the operation and maintenance phase of the Proposed Development have been assessed. The potential impacts arising from the operation and maintenance phase of the Proposed Development are listed in **Table 1.16**, along with the maximum design scenario against which each impact has been assessed.

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

Statutory Designated Sites

1.9.3 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 operational effects.

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

Sensitivity of receptor

1.9.5 Statutory designated sites are assessed as of **High/National** sensitivity.

Magnitude of impact

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

Significance of effect

1.9.7 Taking into account the mitigation measures adopted as part of the project, the significance of effects would be **Negligible**.

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

Further Mitigation

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

Locally Designated Sites

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

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

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

Sensitivity of receptor

1.9.13 Locally designated sites are assessed as of **Medium/County** sensitivity.

Magnitude of impact

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

Significance of effect

1.9.15 Considering the mitigation measures adopted as part of the project, the significance of effects would be Negligible.

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

Further Mitigation

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

Devon Hedgerows

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

1.9.19 As habitats created to provide landscape and BNG establish and mature, there is likely to be a small increase in net length of hedgerow.

Sensitivity of receptor

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

Magnitude of impact

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

Significance of effect

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

Further Mitigation

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

Streams with Wooded Banks

1.9.24 Operation of the Proposed Development is unlikely to have further adverse effects on streams with wooded banks.

1.9.25 As operation progresses, there will be a net increase in water-course quality associated with the BNG proposals for the scheme, which would include water-course improvements to assist with wet woodland creation.

Sensitivity of receptor

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

Magnitude of impact

1.9.27 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **Medium Beneficial**.

Significance of effect

1.9.28 Taking into account the mitigation measures adopted as part of the Proposed Development, the significance of effects of water course quality is likely to be **Medium Beneficial**.

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

Further Mitigation

1.9.30 No further mitigation is proposed in relation to streams with wooded banks.

Improved Grasslands and Arable Leys

1.9.31 Operation of the Proposed Development is unlikely to have any significant effects on improved grasslands and arable leys.

Sensitivity of receptor

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

Magnitude of impact

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

Significance of effect

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

Further Mitigation

1.9.35 No further mitigation is proposed in relation to improved grassland and arable leys.

Species-Poor Semi-Improved Grassland

1.9.36 Operation of the Proposed Development is unlikely to have any significant effects on species-poor semi-improved grasslands.

Sensitivity of receptor

1.9.37 The sensitivity of species-poor semi-improved grassland in locations affected by the Proposed Development is **Negligible/Parish**.

Magnitude of impact

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

Significance of effect

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

Further Mitigation

1.9.40 No further mitigation is proposed in relation to specie-poor semi-improved grassland.

Arable Cropland

1.9.41 Operation of the Proposed Development is unlikely to have any significant effects on arable croplands.

Sensitivity of receptor

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

Magnitude of impact

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

Significance of effect

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

Further Mitigation

1.9.45 No further mitigation is proposed in relation to specie-poor semi-improved grassland.

Dormice

1.9.46 Operation of the Proposed Development is likely to result in increased habitat availability for dormice because of the proposed mitigation/BNG habitat creation.

Sensitivity of receptor

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

Magnitude of impact

1.9.48 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **Low Beneficial**.

Significance of effect

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

Further Mitigation

1.9.50 No further mitigation is proposed in relation to dormice.

Otters

1.9.51 Operation of the Proposed Development is unlikely to have any significant effects on otters.

Sensitivity of receptor

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

Magnitude of impact

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

Significance of effect

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

Further Mitigation

1.9.55 No further mitigation is proposed in relation to dormice.

Bats

1.9.56 Operation of the Proposed Development is likely to result in increased habitat availability for bats (particularly light-sensitive species) because of the proposed mitigation/BNG habitat creation.

Sensitivity of receptor

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

Magnitude of impact

1.9.58 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **Low Beneficial**.

Significance of effect

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

Further Mitigation

1.9.60 No further mitigation is proposed in relation to dormice.

Badgers

1.9.61 Operation of the Proposed Development is unlikely to have any significant effects on badgers.

Sensitivity of receptor

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

Magnitude of impact

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

Significance of effect

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

Further Mitigation

1.9.65 No further mitigation is proposed in relation to badgers.

Breeding Birds

1.9.66 Operation of the Proposed Development is likely to result in increased habitat availability for breeding birds as a result of the proposed mitigation/BNG habitat creation.

Sensitivity of receptor

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

Magnitude of impact

1.9.68 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **Low Beneficial**.

Significance of effect

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

Further Mitigation

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

Wintering and Migratory Birds

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

Sensitivity of receptor

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

Magnitude of impact

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

Significance of effect

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

Further Mitigation

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

Reptiles

1.9.76 Operation of the Proposed Development is unlikely to have any significant effects on reptiles.

Sensitivity of receptor

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

Magnitude of impact

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

Significance of effect

1.9.79 Overall, the magnitude of the impact is Negligible, and the sensitivity of the receptor is Low/District. The effect will, therefore, be of **Negligible** significance, which is not significant.

Further Mitigation

1.9.80 No further mitigation is proposed in relation to reptiles.

Aquatic Invertebrates

1.9.81 Operation of the Proposed Development is likely to result in increased habitat availability for aquatic invertebrates as a result of the proposed mitigation/BNG habitat creation, particularly water-course enhancements.

Sensitivity of receptor

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

Magnitude of impact

1.9.83 The impact is predicted to be of local spatial extent and long term duration. The magnitude is **Low Beneficial**.

Significance of effect

1.9.84 Overall, the magnitude of the impact is Low Beneficial, and the sensitivity of the receptor is Low/District. The effect will, therefore, be of **Negligible** significance, which is not significant.

Further Mitigation

1.9.85 No further mitigation is proposed in relation to aquatic invertebrates.

Future Monitoring

1.9.86 Monitoring during the operational phase will be necessary to ensure wildlife populations affected by the Proposed Development remain present and viable. Monitoring of protected species affected by the Proposed Development will be set out in any licence application method statement required, or where licensing is not required (such as with protected common reptiles) within the LEMP document.

1.9.87 Monitoring of habitats created for BNG and or other mitigation will also require continued monitoring. The BNG metric and instructions indicate monitoring

requirements to ensure habitats created reach and maintain their required condition assessment. Details of habitat monitoring requirements will be set out in the LEMP document.

1.10 Assessment of Decommissioning Effects

1.10.1 The impacts of the decommissioning phase of the Proposed Development have been assessed. The potential impacts arising from the operation and maintenance phase of the Proposed Development are listed in **Table 1.16**, along with the maximum design scenario against which each impact has been assessed.

1.10.2 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 timescale required for decommissioning, which is assumed to be in the order of one year or less for most operations.

1.10.3 Given the long-time which will elapse prior to a requirement for decommissioning, which is presumed to be 50 years from 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.

1.10.4 Reference to all monitoring activity (set out in 1.8.208 to 1.8.209 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.

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

Statutory Designated Sites

1.10.6 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 site.

1.10.7 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 PEIR. This topic is not considered further in this Chapter.

Sensitivity of receptor

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

Magnitude of impact

1.10.9 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 a CEMP) included with the scheme is not properly implemented or adhered to.

1.10.10 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 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.

1.10.11 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.

1.10.12 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.]

1.10.13 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.14 Considering the mitigation measures adopted as part of the project, 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.

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

Further Mitigation

1.10.16 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 HDD decommissioning 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.

1.10.17 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.

Locally Designated Sites

1.10.18 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 1.8.18 above, due to their proximity to the proposed development.

Sensitivity of receptor

1.10.19 Locally designated sites are assessed as of **Medium/County** sensitivity.

Magnitude of impact

1.10.20 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 CEMP) included with the scheme is not properly implemented or adhered to.

1.10.21 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 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 site and the Tarka Trail footpath and cycle track running along the Torridge Estuary.

1.10.22 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.

1.10.23 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.]

1.10.24 The impact is predicted to be of local spatial extent and long term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

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

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

Further Mitigation

1.10.27 No additional mitigation is proposed specifically in relation to the locally designated sites, in addition to the screening measures referred to in 1.10.13 of this chapter above.

1.10.28 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.

Devon Hedgerows

1.10.29 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 receptor

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

Magnitude of impact

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

Significance of effect

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

Further Mitigation

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

Streams with Wooded Banks

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

1.10.35 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 receptor

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

Magnitude of impact

1.10.37 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

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

Further Mitigation

1.10.39 Overall, the magnitude of the impact is High, and the sensitivity of the receptor is Negligible/Parish. The effect will, therefore, be of **Minor adverse** significance, which is not significant.

Improved Grasslands and Arable Leys

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

Sensitivity of receptor

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

Magnitude of impact

1.10.42 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.43 Overall, the magnitude of the impact is Low, and the sensitivity of the receptor is Negligible/Parish. The effect will, therefore, be of **Negligible** significance, which is not significant.

Further Mitigation

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

Species-Poor Semi-Improved Grassland

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

Sensitivity of receptor

1.10.46 The sensitivity of species-poor semi-improved grassland in locations affected by the Proposed Development is **Low/Local**.

Magnitude of impact

1.10.47 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.48 Overall, the magnitude of the impact is Low, and the sensitivity of the receptor is Low/Local. The effect will, therefore, be of **Negligible** significance, which is not significant.

Further Mitigation

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

Arable Cropland

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

Sensitivity of receptor

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

Magnitude of impact

1.10.52 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.53 Overall, the magnitude of the impact is Low, and the sensitivity of the receptor is Negligible/Parish. The effect will, therefore, be of **Negligible** significance, which is not significant.

Further Mitigation

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

Dormice

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

Sensitivity of receptor

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

Magnitude of impact

1.10.57 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

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

Further Mitigation

1.10.59 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.

Otters

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

Sensitivity of receptor

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

Magnitude of impact

1.10.62 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

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

Further Mitigation

1.10.64 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.

Bats

1.10.65 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 receptor

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

Magnitude of impact

1.10.67 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

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

Further Mitigation

1.10.69 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].

Badgers

1.10.70 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 receptor

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

Magnitude of impact

1.10.72 The impact is predicted to be of local spatial extent and short term duration. The magnitude would therefore be **Low Adverse**.

Significance of effect

1.10.73 Overall, the magnitude of the impact is Low, and the sensitivity of the receptor is Negligible/Parish. The effect would, therefore, be of **Negligible** significance, which is not significant.

Further Mitigation

1.10.74 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.

Breeding Birds

1.10.75 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 receptor

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

Magnitude of impact

1.10.77 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.78 Overall, the magnitude of the impact is Low Adverse, and the sensitivity of the receptor is Medium/County. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

1.10.79 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.

Wintering and Migratory Birds

1.10.80 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 receptor

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

Magnitude of impact

1.10.82 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.83 Overall, the magnitude of the impact is Low Adverse, and the sensitivity of the receptor is Medium/County. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

1.10.84 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.

Reptiles

1.10.85 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 receptor

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

Magnitude of impact

1.10.87 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.88 Overall, the magnitude of the impact is Low Adverse, and the sensitivity of the receptor is Low/District. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

1.10.89 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].

Aquatic Invertebrates

1.10.90 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 receptor

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

Magnitude of impact

1.10.92 The impact is predicted to be of local spatial extent and short term duration. The magnitude is therefore **Low Adverse**.

Significance of effect

1.10.93 Overall, the magnitude of the impact is Low Adverse, and the sensitivity of the receptor is Low/District. The effect would, therefore, be of **Minor Adverse** significance, which is not significant.

Further Mitigation

1.10.94 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.

1.11 Cumulative Environmental Assessment

1.11.1 The Cumulative Effects Assessment (CEA) considers the impact associated with the Proposed Development and 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 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.

1.11.2 The ecology and nature conservation CEA methodology has followed the methodology set out in Volume 1, Chapter 5: EIA methodology of the PEIR. 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; or
  - 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; or
  - identified in other plans and programmes.

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

1.11.4 The specific projects, plans and activities scoped into the CEA, are outlined in **Table 1.15**.

Table 1.15: List of cumulative developments considered within the CEA

Project	Status	Distance from Proposed Development (nearest point)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
Tier 1						
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)	Permitted	Adjacent to Proposed Development Draft Order Limits	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). Location: Clovelly Road/A39			Yes
Installation and operation of a solar farm together with all associated works, equipment and infrastructure (Further Information)	Permitted	Partially within the Proposed Development Draft Order Limits	Installation and operation of a Solar Farm together with all associated works, equipment and necessary infrastructure. Location: Near Alverdiscott Substation			Yes
Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 276	Permitted	0.1 km from the Proposed Development Draft Order Limits	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 276 no. dwellings, associated infrastructure and open space pursuant outline planning permission. Location: Clovelly Road/A39			Yes

Project	Status	Distance from Proposed Development (nearest point)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
no. dwellings, associated infrastructure and open space pursuant outline planning permission 1/0039/2014/OUTM (Amended Plans)						
Reserved matters application for details of appearance, landscaping, layout and scale for 61 no. dwellings and associated works pursuant to application 1/1086/2017/OUTM	Pending	Adjacent to the Proposed Development Draft Order Limits	Reserved matters application for details of appearance, landscaping, layout and scale in respect of a proposal for 61 no. dwellings and associated works pursuant to Outline Planning Permission LPA Ref; 1/1086/2017/OUTM. Location: Clovelly Road/A39			Yes
Outline application for the erection of up to 400 dwellings, amenity open space, footpath links, associated landscaping and infrastructure works with all matters reserved except access (Affecting a Public Right of Way)	Permitted	0.3 km from the Proposed Development Draft Order Limits	Outline application for the erection of up to 400 dwellings, amenity open space, footpath links, associated landscaping and infrastructure works with all matters reserved except access (Affecting a Public Right of Way). Location: Cornborough Road/Westward Ho!			Yes

Project	Status	Distance from Proposed Development (nearest point)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
Reserved matters application for access, appearance, landscaping, layout & scale pursuant to planning approval 1/0521/2021/FULM	Permitted	Adjacent to the Proposed Development Draft Order Limits	300 dwellings with associated infrastructure and public open space (Variation of conditions 1 (the reserved matters), 11 (highways) and 18 (contamination). Location: Manteo Way			Yes
Reserved matters application for appearance, landscaping, layout and scale for a proposal of 200 dwellings pursuant to outline planning permission 1/0947/2020/OUTM and associated infrastructure (Amended Plans)	Pending	Adjacent to the Proposed Development Draft 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
Outline application for up to 211 dwellings, up to 4.27 hectares of commercial land (Use Classes B2, B8 and E(g)), public open space, and other associated infrastructure with all	Permitted	0.5 km from the Proposed Development Draft Order Limits	Outline application for up to 211 dwellings - use classes B2, B8 and E(g), public open space and other associated infrastructure with all matters reserved except access. Location: Clovelly Road/A39			Yes

Project	Status	Distance from Proposed Development (nearest point)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
matters reserved except access.						
Erection of 117 dwellings and associated works including site access	Permitted	0.4 km from the Proposed Development Draft Order Limits	Erection of 117 dwellings and associated works including site access. Location: Westward Ho!			Yes
Proposed new business hub incorporating a conference centre, new offices, a gym, nursery, associated car parking and landscaping	Permitted	0.7 km from the Proposed Development Draft Order Limits	Proposed new business hub incorporating a conference centre, new offices, a gym, nursery, associated car parking and landscaping. Location: East the Water			Yes
Extension of time of planning permission 1/0327/2008/FUL for the erection of 12 new dwellings with parking (Variation of conditions 2, 3, 12 & 13 of Planning Approval 1/0233/2012/EXTM (formerly 1/0327/2008/FUL).	Permitted	0.1 km from the Proposed Development Draft 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
Reserved Matters (appearance, landscaping, layout and scale)	Under construction	0.7 km from the Proposed Development	Reserved Matters (appearance, landscaping, layout and scale) application pursuant to 1/1084/2015/OUTM application for 145 dwellings, with associated public open space,			Yes

Project	Status	Distance from Proposed Development (nearest point)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
application pursuant to 1/1084/2015/OUTM application for 145 dwellings, with associated public open space, play areas, landscaping and access from Cornborough Road following demolition of 2 existing dwelling. (Variation of Conditions 1 (plans schedule) and condition 2 (materials) pursuant to application 1/0363/2020/REMM		Draft Order Limits	play areas, landscaping and access from Cornborough Road following demolition of 2 existing dwellings (additional information). Location: Westward Ho!			
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	Permitted	Adjacent to the Proposed Development Draft 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

Project	Status	Distance from Proposed Development (nearest point)	Description	Dates of Construction (if available)	Dates of Operation (if available)	Overlap with the Proposed Development?
Abbotsham Road. All matters reserved except access						
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. (Variation of Condition 1 of application)	Permitted	Adjacent to the Proposed Development Draft 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

Cumulative Effects Assessment

1.11.5 A description of the significance of cumulative effects upon ecology and nature conservation receptors arising from construction and operation is given below.

1.11.6 The 14 developments identified in **Table 1.15** above mainly relate to several housing developments in two main locations, roughly between the A39 and Clovelly Road and along Manteo Way. In addition, there are three housing developments from Westward Ho and a small redevelopment of an industrial site on Gammaton Road within the urban part of East the Water. The permitted solar park lies close to the existing Alverdiscott substation.

1.11.7 The developments considered in the CEA generally affect and modify areas of arable and grazing ground, broadly similar to those encountered by the Proposed Development. The Onshore Infrastructure Area will result in a minor amount of permanent habitat loss/modification in comparison with the proposed developments at A39/Cornborough Road and Manteo Way which will result in significantly larger amounts of habitat modification.

1.11.8 The following paragraphs briefly review the potential cumulative effects on the IEFs considered in this assessment.

Construction

Tier 1 Projects

1.11.9 All developments considered in **Table 1.15** have been permitted (except for number 7, which is an amendment to an existing design). As such, their impacts on statutory designated sites and locally designated sites will have been considered and addressed during the planning application process. The in-combination effect of the Proposed Development with these other designations should not result in a significant increase in effects.

1.11.10 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. Including the Proposed Development will not add significantly to this effect.

1.11.11 Cumulative effects on Devon hedges are unlikely to be substantial as hedgerows are now considered under BNG assessment, and Proposed Development landscape plans will consider this.

1.11.12 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.

1.11.13 The developments considered for cumulative effects will result in some permanent loss of grassland and arable cropland, as will the construction of the Xlinks 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.

1.11.14 Protected and notable species which are not particularly mobile, such as dormice, reptiles, and aquatic invertebrates, are less likely to be subject to in combination

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.

1.11.15 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.

1.11.16 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 development number 2 (solar array) in **Table 1.15** 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.

1.11.17 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.

Tier 2 Projects

1.11.18 No Tier 2 projects have been identified.

Operation and Maintenance

Tier 1 Projects

1.11.19 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.

1.11.20 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.

Tier 2 Projects

1.11.21 No Tier 2 projects have been identified.

Decommissioning

Tier 1 Projects

1.11.22 Cumulative effects in relation to decommissioning are not clear, as the scope and timing of decommissioning are currently unknown. It is not clear what future developments will occur which could be considered for in combination effects.

1.11.23 Considering the list of other projects included in **Table 1.15** above, it is unlikely that cumulative effects from decommissioning would deviate from those assessed currently for the Proposed Development alone.

Tier 2 Projects

1.11.24 No Tier 2 projects have been identified.

1.12 Transboundary Effects

1.12.1 A screening of transboundary impacts has been carried out. It has been 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.

1.13 Inter-related Effects

1.13.1 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), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases (e.g., construction noise effects from piling and operational substation noise).
- Receptor led effects: Assessment of the scope for all effects (including inter-relationships between environmental topics) to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on onshore ecology and nature conservation, such as water pollution/change in water flow, may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.

1.13.2 Further details of inter-related effects are provided in Volume 4, Chapter 5: Inter-related effects.

1.14 Summary of Impacts, Mitigation Measures and Monitoring

1.14.1 Information on onshore ecology and nature conservation within the study area was collected through desktop review, site surveys, and consultation.

1.14.2 **Table 1.16** 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.

1.14.3 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 cable route and permanent loss associated with the construction of the Converter site
- Moderate Adverse effect on dormice as a result of long-term temporary damage to hedgerows forming dormouse habitat as a result of construction of the cable route
- Moderate Adverse effect on bats as a result of long-term temporary damage to hedgerows forming bat foraging and commuting habitat as a result of construction of the cable route

1.14.4 **Table 1.17** presents a summary of the potential cumulative impacts and residual effects.

1.14.5 Overall, it is concluded that there will be the following additional significant cumulative effects from the Proposed Development alongside other projects/plans.

- Some potential increase in 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. Although an increase is likely, it is unlikely to be sufficient to raise the significance of the effect from the Moderate Adverse category assessed for the Proposed Development alone;
- There is likely to be some increase in pressure on breeding birds during overlapping construction periods as a result of temporary and permanent disturbance to and loss of potential nesting habitats. In considering the Proposed Development alone, this is assessed as a Low Adverse magnitude of impact, but as a result of cumulative effects, it should be considered to be a Medium Adverse magnitude, resulting in a Moderate significance of effect.

1.14.6 No potential transboundary impacts have been identified in regard to the effects of the Proposed Development.

Table 1.16: Summary of potential environmental effects

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
Statutory designated sites	High/National	Indirect effects as a result of construction contamination	Long term (7 years maximum construction period)	Low Adverse	Minor adverse	Not significant	
Non statutory designated sites	Medium/County	Indirect effects as a result of construction contamination.	Long term (7 years maximum construction period)	Low Adverse	Minor Adverse	Not significant	
Habitat feature Devon Hedgerows	Medium/County	Direct temporary loss of hedgerows (Except permanent loss of hedgerows associated with Converter site)	Long term (7 years maximum construction period)	Medium Adverse	Moderate Adverse	Significant	
Habitat feature: streams with wooded banks	Medium/County	Potential disturbance to these features from HDD compounds adjacent to them. Where no HDD proposed temporary habitat damage	Long term (7 years maximum construction period)	Low Adverse	Minor Adverse	Not Significant	
Habitat feature: improved grasslands and arable leys	Negligible/Parish	Temporary loss of these habitats under cable route. Some permanent loss	Long term (7 years maximum construction period)	High Adverse	Minor Adverse	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		of these habitats under Converter site and road improvement areas					
Habitat feature: Semi-improved grasslands	Low/Local	Temporary loss of this habitat under cable route and construction/HDD compounds	Long term (7 years maximum construction period)	Medium Adverse	Minor Adverse	Not Significant	
Habitat feature: arable cropland	Negligible/Parish	Temporary loss of this habitat under cable route and construction/HDD compounds. Permanent loss of small amounts of this habitat under Converter site	Long term (7 years maximum construction period)	High Adverse	Minor Adverse	Not Significant	
Protected species: Dormice	Medium/Regional	Damage to dormouse habitat (hedgerows) and potential disturbance to habitats adjacent to construction works	Long term (7 years maximum construction period)	Medium Adverse	Moderate Adverse	Significant	
Protected species: Otters	Medium/Regional	Potential disturbance to water-courses used by otters	Long term (7 years maximum construction period)	Low Adverse	Minor Adverse	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Protected species: Bats	Medium/Regional	Damage to hedgerows used as foraging/ migration flight-lines. Potential disturbance to adjacent habitats potentially including bat roosts from construction works.	Long term (7 years maximum construction period)	Medium Adverse	Moderate Adverse	Significant	
Protected species: Badgers	Negligible/Parish	Potential damage or disturbance to badger setts	Long term (7 years maximum construction period)	Medium Adverse	Minor Adverse	Not Significant	
Protected species: Breeding birds	Medium/County	Potential damage/disturbance to habitats used by breeding birds and reduction in available breeding habitat for duration of construction	Long term (7 years maximum construction period)	Low Adverse	Minor Adverse	Not Significant	
Protected species: Wintering and migratory birds	Medium/County	Potential disturbance to areas used at low levels by wintering and migratory birds	Long term (7 years maximum construction period)	Low Adverse	Minor Adverse	Not Significant	
Protected species: Reptiles	Low/District	Potential temporary (cable route) and	Long term (7 years maximum	High Adverse	Moderate Adverse	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		possibly permanent (Converter site) destruction of reptile habitat as a result of construction. Potential for injury to individual reptiles as a result of construction work	construction period)				
Aquatic invertebrates	Low/District	Possible contamination incidents as a result of construction activity adjacent to streams	Long term (7 years maximum construction period)	Medium Adverse	Minor Adverse	Not Significant	
Operational phase							
Statutory designated sites	High/National	No impact	Long term	Negligible	Negligible	Not Significant	
Non statutory designated sites	Medium/County	No impact	Long term	Negligible	Negligible	Not Significant	
Habitat feature Devon Hedgerows	Medium/County	Increase in hedgerows as BNG habitats establish and mature	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Habitat feature: streams with wooded banks	Medium/County	Increase in water course quality associated with BNG improvements	Long term	Medium Beneficial	Medium Beneficial	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Habitat feature: improved grasslands and arable leys	Negligible/Parish	No impact	Long term	Negligible	Negligible	Not Significant	
Habitat feature: Semi-improved grasslands	Negligible/Parish	No impact	Long term	Negligible	Negligible	Not Significant	
Habitat feature: arable cropland	Negligible/Parish	No impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Dormice	Medium/Regional	Increase in habitat availability as a result of mitigation/BNG planting	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Protected species: Otters	Medium/Regional	No impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Bats	Medium/Regional	Increase in habitat availability as a result of mitigation/BNG planting	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Protected species: Badgers	Negligible/Parish	No impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Breeding birds	Medium/County	Increase in habitat availability as a result of mitigation/BNG planting	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Protected species: Wintering and migratory birds	Medium/County	No impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Reptiles	Low/District	No impact	Long term	Negligible	Negligible	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Aquatic invertebrates	Low/District	Increase in habitat availability as a result of mitigation/BNG planting	Long term	Low Beneficial	Negligible	Not Significant	
Decommissioning phase							
Statutory designated sites	High/National	Indirect effects as a result of demolition contamination	Short term	Low Adverse	Minor Adverse	Not Significant	
Non statutory designated sites	Medium/County	Indirect effects as a result of demolition contamination.	Short term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature: Devon Hedgerows	Medium/County	Potential direct temporary loss of hedgerows	Short term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature: streams with wooded banks	Medium/County	Potential disturbance to these features from HDD decommissioning compounds adjacent to them. Where no HDD proposed, potential temporary habitat damage	Short term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature: improved grasslands and arable leys	Negligible/Parish	Some temporary loss of these habitats under cable route	Short term	Low Adverse	Negligible	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		decommissioning compounds.					
Habitat feature: Semi-improved grasslands	Low/Local	Temporary loss of this habitat under cable route and demolition/ HDD compounds	Short term	Low Adverse	Negligible	Not Significant	
Habitat feature: arable cropland	Negligible/Parish	Temporary loss of this habitat under cable route and demolition/ HDD compounds.	Short term	Low Adverse	Negligible	Not Significant	
Protected species: Dormice	Medium/Regional	Damage to dormouse habitat (hedgerows) and potential disturbance to habitats adjacent to demolition works	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Otters	Medium/Regional	Potential disturbance to water-courses used by otters during decommissioning works	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Bats	Medium/Regional	Damage to hedgerows used as foraging/ migration flight-lines. Potential disturbance to adjacent habitats potentially	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		including bat roosts from demolition works.					
Protected species: Badgers	Negligible/Parish	Potential damage or disturbance to badger setts	Short term	Low Adverse	Negligible	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Breeding birds	Medium/County	Potential damage/ disturbance to habitats used by breeding birds and reduction in available breeding habitat for duration of demolition	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Wintering and migratory birds	Medium/County	Potential disturbance to areas used at low levels by wintering and migratory birds	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Reptiles	Low/District	Potential temporary damage to reptile habitat as a result of demolition. Potential for injury to individual reptiles as a result of demolition work	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Aquatic invertebrates	Low/District	Possible contamination incidents as a result of demolition activity adjacent to streams	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning

Table 1.17: Summary of potential cumulative environmental effects

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Construction phase							
Statutory designated sites	High/National	No additional impact	Long term	Negligible adverse	Minor Adverse	Not significant	
Non statutory designated sites	Medium/County	No additional impact	Long term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature Devon Hedgerows	Medium/County	No additional impact	Long term	Medium Adverse	Moderate Adverse	Significant	
Habitat feature: streams with wooded banks	Medium/County	No additional impact	Long term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature: improved grasslands and arable leys	Negligible/Parish	In combination permanent habitat loss	Long term	High Adverse	Moderate Adverse	Not Significant	
Habitat feature: Semi-improved grasslands	Low/Local	No additional impact	Long term	Medium Adverse	Minor Adverse	Not Significant	
Habitat feature: arable cropland	Negligible/Parish	No additional impact	Long term	High Adverse	Moderate Adverse	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Protected species: Dormice	Medium/Regional	No additional impact	Long term	Medium Adverse	Moderate Adverse	Significant	
Protected species: Otters	Medium/Regional	No additional impact	Long term	Low Adverse	Minor Adverse	Not Significant	
Protected species: Bats	Medium/Regional	In combination disturbance to light-sensitive bat species	Long term	Medium Adverse	Moderate Adverse	Significant	
Protected species: Badgers	Negligible/Parish	No additional impact	Long term	Medium Adverse	Minor Adverse	Not Significant	
Protected species: Breeding birds	Medium/County	In combination loss/disturbance to potential bird nesting habitats	Long term	Medium Adverse	Moderate Adverse	Significant	
Protected species: Wintering and migratory birds	Medium/County	No additional impact	Long term	Low Adverse	Minor Adverse	Not Significant	
Protected species: Reptiles	Low/District	No additional impact	Long term	High Adverse	Moderate Adverse	Not Significant	
Aquatic invertebrates	Low/District	No additional impact	Long term	Medium Adverse	Minor Adverse	Not Significant	
Operational phase							
Statutory designated sites	High/National	No additional impact	Long term	Negligible	Negligible	Not Significant	
Non statutory designated sites	Medium/County	No additional impact	Long term	Negligible	Negligible	Not Significant	
Habitat feature Devon Hedgerows	Medium/County	No additional impact	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Habitat feature: streams with wooded banks	Medium/County	No additional impact	Long term	Medium Beneficial	Medium Beneficial	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Habitat feature: improved grasslands and arable leys	Negligible/Parish	No additional impact	Long term	Negligible	Negligible	Not Significant	
Habitat feature: Semi-improved grasslands	Low/Local	No additional impact	Long term	Negligible	Negligible	Not Significant	
Habitat feature: arable cropland	Negligible/Parish	No additional impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Dormice	Medium/Regional	No additional impact	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Protected species: Otters	Medium/Regional	No additional impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Bats	Medium/Regional	No additional impact	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Protected species: Badgers	Negligible/Parish	No additional impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Breeding birds	Medium/County	No additional impact	Long term	Low Beneficial	Minor Beneficial	Not Significant	
Protected species: Wintering and migratory birds	Medium/County	No additional impact	Long term	Negligible	Negligible	Not Significant	
Protected species: Reptiles	Low/District	No additional impact	Long term	Negligible	Negligible	Not Significant	
Aquatic invertebrates	Low/District	No additional impact	Long term	Low Beneficial	Negligible	Not Significant	
Decommissioning phase							
Statutory designated sites	High/National	Indirect effects as a result of demolition contamination	Short term	Low Adverse	Minor Adverse	Not Significant	

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
Non statutory designated sites	Medium/County	Indirect effects as a result of demolition contamination.	Short term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature Devon Hedgerows	Medium/County	Potential direct temporary loss of hedgerows	Short term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature: streams with wooded banks	Medium/County	Potential disturbance to these features from HDD compounds adjacent to them. Where no HDD proposed temporary habitat damage	Short term	Low Adverse	Minor Adverse	Not Significant	
Habitat feature: improved grasslands and arable leys	Negligible/Parish	Some temporary loss of these habitats under cable route.	Short term	Low Adverse	Negligible	Not Significant	
Habitat feature: Semi-improved grasslands	Low/Local	Temporary loss of this habitat under cable route and demolition/ HDD compounds	Short term	Low Adverse	Negligible	Not Significant	
Habitat feature: arable cropland	Negligible/Parish	Temporary loss of this habitat under cable route and demolition/ HDD compounds.	Short term	Low Adverse	Negligible	Not Significant	
Protected species: Dormice	Medium/Regional	Damage to dormouse habitat (hedgerows) and	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		potential disturbance to habitats adjacent to demolition works					species) at time of decommissioning
Protected species: Otters	Medium/Regional	Potential disturbance to water-courses used by otters	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Bats	Medium/Regional	Damage to hedgerows used as foraging/ migration flight-lines. Potential disturbance to adjacent habitats potentially including bat roosts from demolition works.	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Badgers	Negligible/Parish	Potential damage or disturbance to badger setts	Short term	Low Adverse	Negligible	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Breeding birds	Medium/County	Potential damage/ disturbance to habitats used by breeding birds and reduction in available breeding habitat	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning

Receptor	Sensitivity of receptor	Description of impact	Short / medium / long term	Magnitude of impact	Significance of effect	Significant / Not significant	Notes
		for duration of demolition					
Protected species: Wintering and migratory birds	Medium/County	Potential disturbance to areas used at low levels by wintering and migratory birds	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Protected species: Reptiles	Low/District	Potential temporary damage to reptile habitat as a result of demolition. Potential for injury to individual reptiles as a result of demolition work	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning
Aquatic invertebrates	Low/District	Possible contamination incidents as a result of demolition activity adjacent to streams	Short term	Low Adverse	Minor Adverse	Not Significant	Will need review of working methods and locations (and status of species) at time of decommissioning

1.15 Next Steps

1.15.1 Additional surveys will be required prior to the final ES and the Applicant is progressing these. These will be required to consider revisions to Proposed Development design and route alignment since initial surveys were undertaken and ensure sufficient coverage is included to cover areas to which access was not previously available.

1.15.2 Additional surveys will include the following:

- Update and increase the scope of desk study to include other potential data holders and ensure the current Proposed Development outline is addressed;
- Carry out additional bat surveys in areas where access was not previously available, particularly the proposed converter site location. Include potential bat tree roost assessment across all areas where access was previously denied;
- Carry out additional dormouse surveys in locations where access was previously not possible, particularly the proposed converter site location and areas to the west of Abbottsham;
- Carry out additional reptile surveys in areas west of Abbottsham and at the proposed converter site location;
- Assess coverage of aquatic invertebrate surveys and update, if necessary;
- Ensure coverage of other protected species surveys is sufficiently current and includes survey data for all areas included in the footprint of the current Proposed Development.
- Carry out an updated review to ensure that results of previous surveys undertaken before 2023 are still likely to be correct and provide an accurate picture of the current ecological baseline at all locations of the Proposed Development.
- Use the above assessment to provide an up-to-date condition assessment of habitats affected by the Proposed Development to feed into BNG calculations;
- Consider whether a hedgerow survey will be required (and undertaken if necessary) to provide additional detail on hedgerow quality across the Proposed Development (majority of hedges currently assessed to be species-rich and in possession of features such as banks likely to classify them as important under the Hedgerows Regulations 1997, in addition the possible presence of dormice in them would also classify them as important under the Regulations);
- Revise EIA to take into account the results of the above additional surveys and ensure all impacts have been taken into account;
- Finalise the exact design and provision of additional habitat creation to be undertaken in order to provide BNG for the Proposed Development and include a full calculation of BNG using the current Statutory BNG calculation matrix.

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