XLINKS' MOROCCO-UK POWER PROJECT

Environmental Statement

Volume 1, Chapter 5: Environmental Impact Assessment Methodology

Document Number: 6.1.5
PINS Reference: EN010164/APP/6.1
APFP Regulations: 5(2)(a)
November 2024
For Issue

Document status					
Version	**Purpose of document**	**Authored by**	**Reviewed by**	**Approved by**	**Review date**
For Issue	Application	RPS	Xlinks 1 Ltd	Xlinks 1 Ltd	November 2024

Prepared by:

RPS

Prepared for:

Xlinks 1 Limited

Contents

Tables

Plate

Appendices (See Volume 1, Appendices)

Appendix Number	Appendix Title
5.1	Scoping Responses
5.2	Transboundary Screening
5.3	Cumulative Effects Assessment Screening Matrix

Glossary

Term	Meaning
Alverdiscott Substation Connection Development	The development required at the existing Alverdiscott Substation Site, which is envisaged to include development of a new 400 kV substation, and other extension modification works to be carried out by National Grid Electricity Transmission. This does not form part of the Proposed Development, however, it is considered cumulatively within the Environmental Impact Assessment as it is necessary to facilitate connection to the national grid.
Applicant	Xlinks 1 Limited.
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.
Cumulative effects assessment	Assessment of the likely effects arising from the Proposed Development alongside the likely effects arising from other proposed developments on the same receptor or resource.
Development Consent Order	An order made under the Planning Act 2008, as amended, granting development consent.
Duration (of impact)	The time over which an impact occurs. An impact may be described as short, medium or long-term and permanent or temporary.
Effect	The term used to express the consequence of an impact. The significance of effect is determined by correlating magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
EIA Scoping Report	A report setting out the proposed scope of the Environmental Impact Assessment process.
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.
Frequency (of impact)	The number of times an impact occurs across the relevant phase/lifetime of a project.
Impact	Change that is caused by an action/proposed development, e.g., land clearing (action) during construction which results in habitat loss (impact).
Inter-related effects	Multiple effects on the same receptor as a result of the Proposed Development. These occur when a series of the same effect acts on a receptor over time to produce a potential additive effect or where a number of separate impacts, such as noise and habitat loss, affect a single receptor.
Material assets	Material assets can be defined as assets or resources that are valued and unique to particular sites, including built assets, heritage assets, and natural assets.
Mitigation measures	The purpose of such measures is to avoid, prevent, reduce or, if possible, offset significant adverse environmental effects.
Offshore Cable Corridor	The proposed corridor within which the offshore Cables are proposed to be located, which is situated within the UK Exclusive Economic Zone.
Onshore HVDC Cable Corridor	The proposed corridor within which the onshore High Voltage Direct Current Cables would be located.

Term	Meaning
Order Limits	The area within which all offshore and onshore components of the Proposed Development are proposed to be located, including areas required on a temporary basis during construction (such as construction compounds).
Planning Inspectorate	The agency responsible for operating the planning process for applications for development consent under the Planning Act 2008.
Preliminary Environmental Information Report	A report that provides preliminary environmental information in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. This is information that enables consultees to understand the likely significant environmental effects of a project and which helps to inform consultation responses.
Proposed Development	The element of the Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.
Receptor	The element of the receiving environment that is affected.
Reversibility	A reversible impact is one where recovery is possible naturally in a relatively short time period, or where mitigation measures can be effective at reversing the impact. An irreversible impact may occur when recovery is not possible within a reasonable timescale, or there is no reasonable chance of action being taken to reverse it.
Scoping Opinion	Sets out the Planning Inspectorate's response (on behalf of the Secretary of State) to the Scoping Report prepared by the Applicant. The Scoping Opinion contains the range of issues that the Planning Inspectorate, in consultation with statutory stakeholders, has identified should be considered within the Environmental Impact Assessment process.
Spatial extent	Geographical area over which the impact may occur.
Transboundary effects	Effects from a project within one state that affect the environment of another state(s).
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
CEA	Cumulative Effects Assessment
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
DCO	Development Consent Order
DESNZ	Department for Energy Security and Net Zero
DMRB	Design Manual for Roads and Bridges
EEA	European Economic Area
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
ES	Environmental Statement
IEMA	Institute of Environmental Management and Assessment
NGET	National Grid Electricity Transmission
PDE	Project Design Envelope
PEIR	Preliminary Environmental Impact Report
SRWMP	Site Resource and Waste Management Plan
UK	United Kingdom
ZoI	Zone of Influence

5 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

5.1 Introduction

5.1.1 This chapter of the Environmental Statement (ES) sets out the approach taken to the Environmental Impact Assessment (EIA) process to date, to identify and evaluate and mitigate the likely significant effects associated with the United Kingdom (UK) elements of Xlinks' Morocco-UK Power Project (the 'Project'). For ease of reference, the UK elements of the Project are referred to in this chapter as the 'Proposed Development'. The ES accompanies the application to the Planning Inspectorate for development consent for the Proposed Development. The EIA process informs the project design and is taken into account by the decision-making body when determining consent.

5.1.2 Further details of topic-specific methodologies, such as survey methods, are provided in the relevant topic chapters in Volumes 2, 3 and 4 of the ES.

5.1.3 This ES chapter:

- sets out the legislative requirements and guidance for EIA, as well as the need for proportionate EIA;
- summarises the EIA process undertaken for the Proposed Development;
- details the EIA scoping and consultation process undertaken to date;
- identifies the scope of the environmental assessment, including those topics scoped in and out of the EIA, the spatial scope of technical assessments, and the maximum design scenario approach;
- details the approach to mitigation and monitoring; and
- presents the approach to EIA, including the characterisation of the baseline environment, the assessment of effects methodology, as well as the approach to assessments for cumulative effects, inter-related effects and transboundary effects.

5.2 Legislation and Guidance

Legislative Context

5.2.1 As set out in Volume 1, Chapter 1: Introduction, of the ES, the legislative requirements for EIA for the Proposed Development are set by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended (referred to in this report as 'the 2017 EIA Regulations'). The 2017 EIA Regulations set out the requirements for EIA under the Planning Act 2008, as amended (referred to in this chapter as 'the Planning Act 2008').

5.2.2 This ES presents the findings of the EIA process in accordance with Regulation 14 of the 2017 EIA Regulations, which states that an application for an order granting development consent for EIA development must be accompanied by an environmental statement. In particular, Regulation 14 of the 2017 EIA Regulations states that an ES should include:

a. '*a description of the proposed development comprising information on the site, design, size and other relevant features of the development;*

b. *a description of the likely significant effects of the proposed development on the environment;*

c. *a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;*

d. *a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;*

e. *a non-technical summary of the information referred to in sub-paragraphs (a) to (d); and*

f. *any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected*.'

5.2.3 This ES has also considered the guidance provided within the Planning Inspectorate Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements (The Planning Inspectorate, 2020). In relation to Environmental Statements, Planning Inspectorate Advice Note Seven states that the Planning Inspectorate considers that a good ES is one that:

- '*Provides a clear description of the Proposed Development through all phases of the development consistent with the DCO i.e. in terms of construction, operation and decommissioning phases;*
- *clearly explains the processes followed to develop the ES including the established scope for the assessment;*
- *explains the reasonable alternatives considered and the reasons for the chosen option taking into account the effects of the Proposed Development on the environment;*
- *details the forecasting methods for the assessment and the limitations (as relevant);*
- *assesses in an open and robust way the assessment of likely significant effects explaining where results are uncertain;*
- *provides sufficient details of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects, the likely efficacy of such measures and how they are secured;*
- *details the need for any ongoing monitoring or remediation; and*
- *demonstrates that the information is sufficient to enable a reasoned conclusion to be reached*.'

5.2.4 The ES will be submitted alongside the application for development consent in accordance with the 2017 EIA Regulations and Planning Inspectorate Advice Note Seven.

5.2.5 **Table 5.1** summarises the compliance of the EIA process for the Proposed Development in the context of Regulation 14(2) requirements and Schedule 4 of the 2017 EIA Regulations.

Table 5.1: Summary of environmental statement requirements (Regulation 14(2) and Schedule 4 of the 2017 EIA Regulations)

Required Information	Location within the ES
Project Description	
A description of the proposed development comprising information on the site, design, size and other relevant features of the development (Regulation 14(2)(a)).	Volume 1, Chapter 3: Project Description of the ES provides a description of the Proposed Development and the parameters used for assessment within this ES. This includes details of the construction, operation and maintenance and decommissioning phases.
A description of the development (Schedule 4, paragraph 1).	
Consideration of Alternatives	
A description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment (Regulation 14(2)(d)).	Volume 1, Chapter 4: Need and Alternatives of the ES sets out details of the site selection undertaken to date. This includes a description of the alternatives considered by the Xlinks 1 Limited (the 'Applicant'), and the environmental aspects taken into account.
A description of the reasonable alternatives studied by the developer (Schedule 4, paragraph 2).	
Baseline Conditions and Assessment of Effects	
A description of the likely significant effects of the proposed development on the environment (Regulation 14(2)(b)).	Details of the baseline environmental conditions, methodologies used, commitments and mitigation measures and likely effects are provided in each of the topic chapters set out within Volumes 2, 3 and 4. Volume 2. • Chapter 1: Onshore Ecology and Nature Conservation. • Chapter 2: Historic Environment. • Chapter 3: Hydrology and Flood Risk. • Chapter 4: Geology, Hydrogeology and Ground Conditions. • Chapter 5: Traffic and Transport. • Chapter 6: Noise and Vibration. • Chapter 7: Air Quality. • Chapter 8: Land Use and Recreation. Volume 3. • Chapter 1: Benthic Ecology. • Chapter 2: Fish and Shellfish Ecology. • Chapter 3: Commercial Fisheries. • Chapter 4: Marine Mammals and Turtles. • Chapter 5: Shipping and Navigation. • Chapter 6: Other Marine Users. • Chapter 7: Marine Archaeology and Cultural Heritage. • Chapter 8: Physical Processes. • Chapter 9: Offshore Ornithology.
A description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment (Regulation 14(2)©).	
A description of the relevant aspects of the current state of the environment (baseline scenario) (Schedule 4, paragraph 3).	
A description of the factors likely to be significantly affected by the development (Schedule 4, paragraph 4).	
A description of the likely significant effects of the development on the environment (Schedule 4, paragraph 5).	
A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment (Schedule 4, paragraph 6).	
A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment (Schedule 4, paragraph 7).	
A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability	

Required Information	Location within the ES
of the development to risks of major accidents and/or disasters (Schedule 4, paragraph 8).	Volume 4. • Chapter 1: Climate Change. • Chapter 2: Landscape, Seascape and Visual Resources. • Chapter 3: Socio-economics and Tourism. • Chapter 4: Human Health. • Chapter 5: Inter-related Effects. In addition, effects in relation to the following are considered within the above chapters and supporting documents as set out in **Table 5.3** below: • waste; • underwater noise; • other residues and emissions; • material assets; and • major accidents and disasters.
Non-Technical Summary	
A non-technical summary of the information referred to in sub-paragraphs (a) to (d) (Regulation 14(2)(e)). A non-technical summary of the information provided under requirements 1-8 (Schedule 4, paragraph 9).	A non-technical summary is provided as a standalone document, summarising the findings of the EIA process in non-technical language (document reference 6.5). The non-technical summary provides a summary of the information referred to in sub-paragraphs (a) to (d) in Regulation 14(2) of the EIA Regulations, including: • the Proposed Development description, including information on the site, design, size and other relevant features; • a description of likely significant effects; • a description of measures to avoid, prevent or reduce and, if possible, offset likely significant effects; and • a description of reasonable alternatives to the Proposed Development, including the main reasons for the chosen option, taking into account the effects on the environment.
Additional Information	
Any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected (Regulation 14(2)(f)).	See above for Schedule 4 requirements.
A reference list detailing the sources used for the descriptions and assessments included in the Environmental Statement (Schedule 4, paragraph 10).	References are provided at the end of each chapter in this ES.

Relevant EIA Guidance

5.2.6 The EIA process has taken into account relevant government or institute guidance, including:

- National Policy Statements and other relevant national policies:
  - Overarching National Policy Statement for Energy (EN-1) (Department for Energy Security & Net Zero (DESNZ), 2023a).
  - National Policy Statement for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b).
  - National Policy Statement for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c).
  - National Planning Policy Framework (Department for Levelling Up, Housing, Communities, 2023).
- Planning Inspectorate guidance:
  - The Planning Inspectorate Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping (Planning Inspectorate, 2020a).
  - The Planning Inspectorate Advice Note Nine: Rochdale Envelope (Planning Inspectorate, 2018).
  - Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents (Planning Inspectorate, 2024a).
  - The Planning Inspectorate Advice Note: Habitats Regulations Assessment relevant to nationally significant infrastructure projects (Planning Inspectorate, 2024b)
  - The Planning Inspectorate Advice: Transboundary Impacts and Process (Planning Inspectorate, 2024c).
  - The Planning Inspectorate Advice: Cumulative effects assessment (Planning Inspectorate, 2024d).
  - The Planning Inspectorate Advice: The Water Framework Directive (Planning Inspectorate, 2024e)
  - Nationally Significant Infrastructure Projects Advice: EIA notification and consultation (Planning Inspectorate, 2024f).
- Institute of Environmental Management and Assessment (IEMA) guidance:
  - Guidelines for Environmental Impact Assessment (IEMA, 2004).
  - Environmental Impact Assessment Guide to: Shaping Quality Development (IEMA, 2015).
  - Environmental Impact Assessment Guide to: Delivering Quality Development (IEMA, 2016).
  - Delivering Proportionate EIA, A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (IEMA, 2017).
- Other relevant guidance:

- Design Manual for Roads and Bridges: Sustainability and Environmental Appraisal. LA 104: Environmental assessment and monitoring (Highways England *et al*., 2020).
- Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Centre for Environment, Fisheries and Aquaculture Science (CEFAS), 2012).
- Planning Practice Guidance (Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, 2024).

Proportionate EIA

5.2.7 This ES has been prepared with the need for proportionate EIA in mind. Since the 1980s, as EIA practice has developed, reporting outputs have become larger. In some cases, this has resulted in an overall improvement in detail and quality. However, it also reflects a precautionary approach and can result in large, unwieldy documents that are difficult for the reader to digest.

5.2.8 IEMA recognises this concern and has developed a drive towards proportionate EIA and has published guidance in the form of its publication 'Delivering proportionate EIA' (IEMA, 2017).

5.2.9 The EIA process for the Proposed Development has used the following tools to deliver a proportionate approach to its EIA process.

- Effective scoping **-** As set out in **section 5.5**, a Scoping Report was submitted to the Planning Inspectorate. The report set out topics to be scoped out of the EIA process. It also set out the scope of assessment for those environmental topics that were to be scoped in, including areas or sub-topics within each topic that can be scoped out. This has been carried forward into the EIA process.
- Ongoing engagement **-** The Applicant's approach to stakeholder engagement throughout the EIA process allows for ongoing consideration of the necessary scope and methodologies for technical topic assessments.
- Commitments Register **-** All committed mitigation is recorded within the Commitments Register. The Commitments Register is provided in Volume 1, Appendix 3.1: Commitments Register of the ES. This ensures early identification of measures required and avoids repetition of these measures throughout this ES.
- Digital outputs - GIS mapping has been used throughout the EIA process to communicate the results of the process clearly.

5.2.10 All topics have been evaluated by competent experts, as required by Regulation 14(4) in the 2017 EIA Regulations. A statement describing the relevant expertise of each EIA team and ES topic authors is provided in Volume 1, Appendix 1.1: Statement of Expertise of the ES.

5.3 Overview of the EIA Process

5.3.1 As detailed within Volume 1, Chapter 1: Introduction of the ES, EIA is 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.

5.3.2 The following provides a summary of the EIA process undertaken for the Proposed Development from the initial scoping stages to the development of the ES:

- Scoping process – the Applicant submitted a Scoping Report in January 2024 to the Planning Inspectorate, which established the proposed scope of the assessment. A Scoping Opinion was issued by the Planning Inspectorate on 7 March 2024, which provided feedback to consider (further detail is provided in **section 5.5**).
- Preliminary Environmental Information Report (PEIR) – a preliminary assessment was undertaken, in accordance with the Scoping Opinion and relevant guidance, which was presented within a PEIR. The PEIR was published in May 2024.
- Statutory Consultation – statutory consultation was undertaken between 16 May and 11 July 2024. This provided opportunities for consultees to review the contents of the PEIR and provide feedback to be incorporated into the progression of the design evolution and environmental assessment (further detail is provided in **paragraphs 5.4.3** to **5.4.10**).
- ES – this ES has been prepared in accordance with the 2017 EIA Regulations and Planning Inspectorate Advice Note Seven (The Planning Inspectorate, 2020) (see **section 5.2**). It considers the feedback provided as part of the scoping process, statutory consultation, and further consultation throughout the EIA process.

5.4 Consultation

Scoping

5.4.1 Consultation on the proposed EIA methodology (including the Cumulative Effects Assessment (CEA) methodology and approach to assessing transboundary and inter-related effects) was undertaken at the EIA scoping stage. The Scoping Report, which contained details of the proposed approach to EIA for each topic was submitted to the Planning Inspectorate in January 2024. The Applicant received the Scoping Opinion on 7 March 2024 from the Planning Inspectorate on behalf of the Secretary of State. Key comments raised during the scoping process in relation to the EIA methodology, are set out in **Table 5.2**.

5.4.2 Following scoping, engagement has continued throughout the EIA process in order to facilitate proportionate EIA and the iterative design process.

Statutory Consultation

5.4.3 Regulation 12 of the EIA Regulations requires an applicant to compile preliminary environmental information to publicise and consult on. The PEIR summarised the initial EIA findings and supported consultation under sections 42 and 47 and publication under section 48 of the Planning Act 2008.

5.4.4 The PEIR allowed those taking part in the consultation to understand the nature, scale, location and likely significant environmental effects of the Proposed Development, such that they could make an informed contribution to the process of pre-application consultation under the Planning Act 2008 and to the EIA process. The statutory consultation on the PEIR ran between 16 May and 11 July 2024, with feedback from stakeholders incorporated where relevant into the ES.

5.4.5 Consultation continued throughout the pre-application phase of the Proposed Development. The topic chapters of the ES and the Consultation Report (document reference 5.1) that accompanies the DCO application explain in more detail how feedback from stakeholders has been taken into account in the preparation of this ES.

5.4.6 Public exhibitions and online webinars were held during the statutory consultation period. At these events, the Applicant consulted stakeholders and the local community on the contents of the PEIR alongside a suite of other documents. Feedback provided from consultation with the community, statutory consultation bodies and other interested parties has helped refine the design of the Proposed Development and inform development of the ES. The topic chapters in this ES provide a summary of the key relevant consultation responses and the way in which they have been considered, together with relevant statutory consultation that has been undertaken.

5.4.7 All consultation materials which were used during consultation are available online at:

https://xlinks.co/devon/

5.4.8 All statutory consultation responses were compiled into a Consultation Report which sets out how each response has been regarded (document reference 5.1).

5.4.9 The Applicant has considered the feedback from the consultation and, where appropriate, used it to inform the refinement of design and the parameters for impact assessment (the Rochdale Envelope) described in Volume 1, Chapter 3: Project Description of the ES.

5.4.10 Key comments raised in relation to the EIA methodology, during statutory consultation, are set out in **Table 5.2**, together with details of how these comments have been addressed within the ES.

Table 5.2: Summary of consultation responses including Scoping Responses, Section 42 responses and further consultation

Date	Consultee and Type of Response	Comment	How and Where Addressed in the ES
March 2024	Planning Inspectorate, Scoping Opinion.	The Inspectorate notes the intention to apply a 'Rochdale Envelope' approach. This is employed when there is a need to seek flexibility to address uncertainty. The Applicant should make every attempt to narrow the range of options and explain clearly in the ES which elements of the Proposed Development have yet to be finalised and provide the reasons. It is noted that the Scoping Report refers interchangeably to 'maximum design scenario' and 'Project Design Envelope' (PDE) when referencing the use of the Rochdale Envelope approach. The terminology used in the ES should be consistent. The ES should also ensure consistency throughout the ES and any other relevant assessments supporting the application from which the ES draws. The Inspectorate advises that flexibility should only be sought where absolutely necessary, in the interests of a proportionate ES based on the most realistic and refined PDE possible. The ES should assess the worst case that could potentially be built out in accordance with the Authorised Development of the Development Consent Order (DCO) being applied for.	The approach is set out in Volume 1, Chapter 3: Project Description of the ES, based on guidance presented in the NPSs and Advice Note 9 (Planning Inspectorate, 2018). Volume 1, Chapter 3: Project Description of the ES sets out the maximum design parameters for the elements of the Proposed Development. Each topic chapter in Volumes 2, 3 and 4 of the ES sets out the maximum design scenario for that topic. Through an iterative site selection process and design process, along with non-statutory consultation, the Applicant has looked to refine the range of options, where possible. The site selection and design evolution is presented within Volume 1, Chapter 4: Needs and Alternatives, of the ES.
March 2024	Planning Inspectorate, Scoping Opinion.	Several aspect chapters in the Scoping Report refer to fixed distance study areas with no explanation as to why these have been selected. The ES should ensure the study area for each aspect reflects the Proposed Development's Zone of Influence (ZoI) and the impact assessment should be based on the ZoI from the Proposed Development with reference to potential effect pathways. Clear justification should be provided to support any distances applied.	Each topic chapter, within Volumes 2, 3 and 4 of the ES, details their assessed study area(s) and includes justification.

Date	Consultee and Type of Response	Comment	How and Where Addressed in the ES
March 2024	Planning Inspectorate, Scoping Opinion.	The Inspectorate notes the intention to identify the projects and plans considered in the Cumulative Effects Assessment (CEA) and that the assessment of cumulative effects would be included in each aspect chapter. It is not clear from **Table 5.1** where the information identifying the projects and plans considered in the CEA will be presented. The ES should clearly identify the projects and plans considered in the CEA. This could be presented as an Appendix. The Applicant is directed to the Planning Inspectorate's Advice on Cumulative Effects Assessment with regards to a potential approach. The Applicant is also advised to seek to agree with relevant consultation bodies which plans and projects should be included in the CEA. North Devon Council identify the potential for cumulative impacts with other renewable energy projects in the area, as identified in the response. NE also identify two potential projects/plans that may also require consideration in the CEA, namely White Cross Offshore Wind Farm (onshore project) and The Crown Estate Round 5 Celtic Sea Flow.	A CEA screening matrix forms Appendix 5.3 to Volume 1 of the ES, which includes the list of plans and projects to be included within the CEA. The cumulative projects and plans include the White Cross Offshore Wind Farm (onshore project) and The Crown Estate Round 5 Celtic Sea project development areas.
March 2024	Planning Inspectorate, Scoping Opinion.	The Inspectorate recommends that the ES should identify whether the Proposed Development has the potential for significant transboundary effects, and if so, what these are, and which EEA States would be affected. The Inspectorate will undertake a transboundary screening on behalf of the SoS in due course.	Volume 1, Appendix 5.2: Transboundary Screening of the ES identifies whether the Proposed Development has the potential for significant transboundary effects. Consideration of transboundary effects are also considered within topic chapters in Volumes 2, 3 and 4.

5.5 Scope of the Assessment

Scoping

5.5.1 Scoping is the process of identifying the relevant topics to consider within the EIA process (establishing the scope of the assessment). Scoping is therefore an important preliminary procedure, which sets the context for the EIA process. Through scoping, the key environmental issues are identified at an early stage, which permits subsequent work to concentrate on those topics for which significant effects may arise.

5.5.2 The scoping process is iterative, informed by increasing knowledge acquired through the EIA process. The scoping process for the Proposed Development included the following.

- Identification of an initial project description, including key components of the Proposed Development and their likely maximum parameters.
- Review the requirements of the EIA Regulations whilst considering the project description (Volume 1, Chapter 3: Project Description of the ES) and characteristics of the surrounding environment to provide an initial indication of the topics likely relevant to the Proposed Development.
- Refine the scope of assessment through the use of consultation and the findings of the initial assessment by topic specialists.

5.5.3 Whilst there is no formal requirement in the 2017 EIA Regulations to seek a Scoping Opinion prior to the submission of an application, it is best practice to do so.

5.5.4 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 Proposed Development (document reference 5.2). It also described those topics or sub-topics proposed to be scoped out of the EIA process and justified as to why the Proposed Development would not have the potential to give rise to significant environmental effects in these topic areas.

5.5.5 Following consultation with the statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) provided a Scoping Opinion (document reference 5.2) on 7 March 2024.

5.5.6 The scope of the EIA process for the Proposed Development, including the scope of this ES, has been informed by legislative requirements, the nature, size and location of the Proposed Development, the Scoping Opinion, the PEIR, stakeholder engagement and statutory consultation undertaken to date.

5.5.7 Details of the key points raised in the Scoping Opinion and the way in which these have been addressed within the PEIR, will continue to be addressed during the ongoing EIA process. The key points are provided in each topic chapter of the ES.

Other EIA Matters

5.5.8 **Table 5.3** sets out details of the topics that are included within the EIA process for the Proposed Development but are presented outside of the main topic chapters

of this ES (or, where not yet available, where they will be considered within the ES).

Table 5.3: Other EIA Matters

Topic	Location within the ES
Topics covered by other documents supporting the DCO	
Waste	An Outline Site Resource and Waste Management Plan (SRWMP) forms Appendix B to the Outline Onshore Construction Environmental Management Plan (On-CEMP) (document reference 7.7, Appendix B). The Outline SRWMP identifies the likely waste arisings from the construction of the Proposed Development and sets out appropriate measures for managing the waste in accordance with the waste hierarchy principle, where these may be relevant. These measures include those to reduce waste; to use less harmful alternative materials; opportunities to use materials with recycled content; to provide appropriate waste storage; and the utilisation of licensed/registered waste carriers.
Topics covered by appendices in the ES	
Underwater noise	Information on underwater noise resulting from the construction, operation and maintenance, and decommissioning phases of the Proposed Development is included as an appendix of this ES (Volume 3, Annex 4.1: Underwater Noise Assessment). Underwater sound is not, in itself, a receptor on which an assessment can be undertaken. An increase in underwater sound is an impact that may affect other ecological receptors. Therefore, underwater sound does not have a separate ES chapter and impacts resulting from an increase in underwater sound are assessed in Volume 3, Chapter 2: Fish and Shellfish Ecology and Volume 3, Chapter 4: Marine Mammals and Turtles, of this ES.
Topics covered in technical chapters of the ES	
Other residues and emissions	The potential impacts of residues and emissions (e.g., dust, pollutants, light, noise or vibration) arising from the construction, operation and maintenance, and decommissioning phases of the Proposed Development have been considered in the following topic chapters of this ES where relevant: • Volume 3, Chapters 1, 2, 4 and 9: Benthic Ecology; Fish and Shellfish Ecology; Marine Mammals and Turtles, and Offshore Ornithology (impacts of emissions to water and noise emissions on ecological receptors); • Volume 2, Chapter 4: Geology, Hydrogeology, and Ground Conditions (impacts of emissions/residues to land on soil quality); • Volume 2, Chapter 3: Hydrology and Flood Risk (impacts of surface water runoff on water quality and flood risk); • Volume 2: Chapter 1: Onshore Ecology and Nature Conservation (impacts of emissions to water, land or air and noise emissions on ecological receptors); • Volume 2, Chapter 6: Noise and Vibration (impacts of noise emissions and vibration); and • Volume 2, Chapter 7: Air Quality (impacts of emissions to air, including dust and other pollutants).
Material assets	The potential impacts on material assets arising from the construction, operation and maintenance, and decommissioning phases of the Proposed Development have been considered in the following topic chapters of this ES: • Volume 3, Chapter 3: Commercial Fisheries; • Volume 3, Chapter 5: Shipping and Navigation; • Volume 3, Chapter 6: Other Marine Users; • Volume 3, Chapter 7: Marine Archaeology and Cultural Heritage; • Volume 2, Chapter 2: Historic Environment; • Volume 2, Chapter 8: Land Use and Recreation; and • Volume 4, Chapter 3: Socio-economics and Tourism.

Topic	Location within the ES
Major accidents and disasters	The potential for major accidents and disasters arising from the construction, operation and maintenance, and decommissioning phases of the Proposed Development has been considered in the topic chapters of this ES. In particular, the following effects have been identified, with the chapters that they are considered in also stated: • a reduction in groundwater quality and quantity resulting from accidental pollution: Volume 2, Chapter 4: Geology, Hydrogeology and Ground Conditions; • the impact of accidental pollution on the quality of surface water and watercourses: Volume 2, Chapter 3: Hydrology and Flood Risk; • increased flood risk: Volume 2, Chapter 3: Hydrology and Flood Risk; • the vulnerability of the Proposed Development to climate change: Volume 4, Chapter 1: Climate Change; • accidental pollution: – Volume 2, Chapter 1: Onshore Ecology and Nature Conservation. – Volume 3, Chapter 6: Shipping and Navigation; and – Volume 3, Chapter 1: Benthic Ecology. • the risk of vessel anchor and gear snagging: Volume 3, Chapter 5: Shipping and Navigation; • the risk of increased vessel collisions: Volume 3, Chapter 5: Shipping and Navigation; • a reduction of under keel clearance: Volume 3, Chapter 5: Shipping and Navigation; • a reduction of emergency response capability and reduced access for Search and Rescue responders: Volume 3, Chapter 5: Shipping and Navigation; • the impact of construction traffic on accidents and safety: Volume 2, Chapter 5: Traffic and Transport; and • the impact of Abnormal Indivisible Loads on safety: Volume 2, Chapter 5: Traffic and Transport.

5.5.9 As set out in Volume 1, Chapter 1: Introduction of the ES, the findings of the Habitats Regulations Assessment and the Marine Conservation Zone assessment are provided within the following reports that are provided alongside this ES:

- Report to Inform Appropriate Assessment (document reference 7.16); and
- Marine Conservation Zone Assessment (document reference 7.15).

Topics Scoped out of the EIA Process

5.5.10 Effects on other aspects of the environment, not detailed above, are not likely to be significant. The topics proposed to be scoped out of the assessment were presented in the Scoping Report. The Planning Inspectorate set out its response on these matters, as set out in **Table 5.4**.

Table 5.4: Topics scoped out of the EIA process

Topic	Agreed Position
Planning Policy	A standalone Local Planning Policy chapter has been scoped out of the EIA process on the basis that a description of the consenting process is outlined in the introductory chapters and that relevant legislation and planning policy context is outlined within each of the topic chapters. A Planning Statement (document reference 7.2) is provided to accompany the application for development consent. The Scoping Opinion at section 3.25 (document reference 5.2) confirms that the Planning Inspectorate is content with this approach.
Sunlight, Daylight and Microclimate	In relation to daylight and sunlight, any built elements, such as the converter stations, would not be sufficiently tall or close to other buildings to result in likely significant effects. In addition, given the nature of the offshore and onshore elements of the

Topic	Agreed Position
	Proposed Development, such as buried cables and limited above ground buildings and infrastructure, these are not likely to result in microclimate changes. As a result, an assessment of the effects in relation to sunlight, daylight and microclimate has been scoped out of the EIA process. The Scoping Opinion at section 3.25 (document reference 5.2) confirms that the Planning Inspectorate is content with this approach. The effects of the Proposed Development on climate change are considered separately in Volume 4, Chapter 1: Climate Change.
Heat	Heat generated during the operation and maintenance of the Proposed Development (e.g. heat generated by offshore and onshore cables) are considered within the relevant topic chapters, including: • Volume 2, Chapter 4: Geology, Hydrogeology and Ground Conditions; • Volume 3, Chapter 1: Benthic Ecology; • Volume 3, Chapter 2: Fish and Shellfish Ecology; and • Volume 3, Chapter 3: Commercial Fisheries. Activities during construction and decommissioning of the Proposed Development are unlikely to generate significant levels of heat and can be scoped out of the EIA process. The Scoping Opinion at section 3.26 (document reference 5.2) confirms that the Planning Inspectorate is content with this approach. The technical specifications of the onshore converter stations will consider any heat generated within the design and this would, as is usual practice, prevent any overheating or heat effects. With these measures in place, it is not considered likely that significant effects in relation to heat will occur at the Converter Site.
Radiation	A standalone chapter addressing the impact of radiation has been scoped out of the EIA process because of the following: • It is considered that activities required to facilitate the construction and decommissioning of the offshore and onshore elements of the Proposed Development would generate negligible levels of Electromagnetic Fields (EMFs) and can be scoped out of the EIA process. The Scoping Opinion at section 3.26 (document reference 5.2) confirms that the Planning Inspectorate is content with this approach. • Due to the distance between the converter station components and the closest publicly accessible point (the perimeter fence), the greatest EMFs exposure in the vicinity of converter stations is typically the underground cables entering and exiting them. All of the electrical infrastructure associated with the offshore and onshore elements of the Proposed Development would be designed to comply with current guidelines such as the 1988 Guidelines for Limiting Exposure to Electromagnetic Fields (International Commission on Non-ionising Radiation Protection, 1988). • Notwithstanding the above, is considered within the relevant chapters, including: – Volume 3, Chapter 1: Benthic Ecology; – Volume 3, Chapter 2: Fish and Shellfish Ecology; – Volume 3, Chapter 3: Commercial Fisheries; – Volume 3, Chapter 4: Marine Mammals and Turtles; and – Volume 3, Chapter 5: Shipping and Navigation.

Defining the Study Area

5.5.11 The spatial scope of each individual technical assessment is set out by reference to the study area along with justification and explanation as to how the area has been defined, including relevant guidance where necessary. These study areas are defined and described as part of each individual technical assessment within Volumes 2, 3 and 4 of the ES.

5.5.12 Where possible, the study areas have been agreed with the relevant consultees.

Identification of Design Parameters for Assessment

5.5.13 As set out in Volume 1, Chapter 3: Project Description, this ES has adopted the maximum design scenario approach, based upon the Project Design Envelope approach (also known as the Rochdale Envelope approach). This approach defines a maximum design envelope and parameters within which the final design will sit, allowing for the assessment of a realistic worst-case scenario.

5.5.14 The maximum design scenario approach allows flexibility for elements that are likely to require more detailed design subsequent to submission of the ES, such as siting of infrastructure and construction methods. It enables different project scenarios, where they may arise, to be presented and assessed for their respective potential impacts, magnitude of impact and/or different effects on receptors, where relevant. It also allows the findings of the consultation process and feedback from statutory and non-statutory stakeholders to be considered during the design process, where appropriate.

5.5.15 Furthermore, this maximum design scenario approach utilises a 'Limit of Deviation' in order to accommodate potential changes in routeing and siting of infrastructure (i.e. due to issues highlighted in the construction design). The Limits of Deviation, which sit within the Order Limits, define the maximum extent within which the development works can be carried out, allowing for a realistic worst-case assessment. For example, the proposed cable route (onshore and offshore) is defined within a Limit of Deviation (the 'offshore Cable Corridor' and 'onshore HVDC Cable Corridor') to provide a proportionate degree of flexibility to accommodate any changes before the final alignment and design of the Proposed Development.

5.5.16 Further details are provided in Volume 1, Chapter 3: Project Description of the ES.

5.5.17 Each topic chapter of the ES sets out the assumptions made regarding the maximum design scenario relevant to that chapter and for each impact.

The Different Phases of the Proposed Development

5.5.18 The onshore chapters within Volume 2 of the ES consider the potential environmental impacts to the onshore environment during the construction phase, operational and maintenance phase, and decommissioning phase of the Proposed Development.

5.5.19 The offshore chapters within Volume 3 of the ES consider the potential environmental impacts to the offshore environment during the construction phase, operational phase (normal), operational phase (repair activities), decommissioning phase (assuming cable de-energised and left *in-situ*) and decommissioning phase (assuming cable removed) of the Proposed Development.

5.5.20 The difference between the onshore and offshore chapters in this regard is consistent with the approach set out in the Scoping Report, and is due to substantial differences in the activities taking place under different operational and decommissioning scenarios for the offshore elements. There is potential for considerable difference in the level of impact significance associated with similar

activities under these different offshore operational and decommissioning scenarios. Thus, these phases have been split and are considered separately within the assessment in each of the offshore chapters within Volume 3.

5.5.21 Volume 1, Chapter 3: Project Description of the ES sets out the anticipated activities associated with all phases of the Proposed Development.

5.6 Approach to Mitigation and Monitoring

Measures Adopted as Part of the Proposed Development

5.6.1 For the purposes of this ES, the term 'measures adopted as part of the Proposed Development' is used to include measures identified during the EIA process to date and presented on the Commitments Register. A Commitments Register is provided in Volume 1, Appendix 3.1: Commitments Register of the ES. This includes the following types of mitigation measures:

- Embedded mitigation - This includes the following measures, as identified in the IEMA 'Guide to Shaping Quality Development' (IEMA, 2016).
  - Primary mitigation - These are measures included as part of the project design. IEMA describes these as 'modifications to the location or design of the development made during the pre-application phase that are an inherent part of the project and do not require additional action to be taken'. This includes modifications arising through the iterative design process. These measures will be secured through the consent itself through the description of the project and the parameters secured in the DCO and/or marine licences. For example, a reduction in footprint or height.
  - Tertiary 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.
- Further (secondary) 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.

5.6.2 The development of mitigation and enhancement measures forms a key part of the iterative EIA process, whereby measures are developed throughout the EIA process in response to initial assessments and stakeholder engagement findings.

5.6.3 The methodology involves a 'feedback loop', detailed in **Plate 5.1**. Where the findings of initial assessments indicate that effects may be significant, changes are made, where practicable, to the project design to reduce or offset the impact. This process is repeated until the EIA practitioner is satisfied that either:

- the effect is reduced to a level that is not significant in EIA terms; or

- no further primary or secondary mitigation can be applied to reduce the impact magnitude (and hence the significance of the effect). In these cases, an overall effect still significant in EIA terms may be presented.

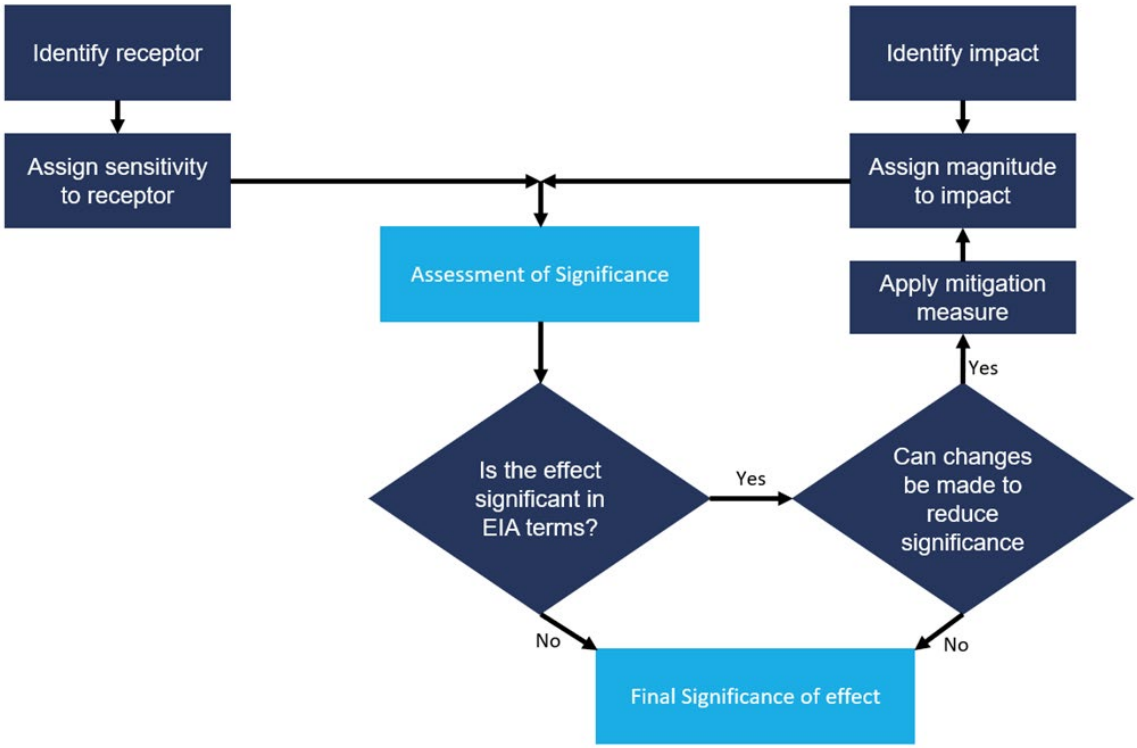

Plate 5.1: Iterative approach to design and mitigation for the Proposed Development

5.6.4 The Proposed Development assessed within this ES, therefore, includes a range of measures that have been designed to reduce or prevent significant adverse effects from arising. The incorporation of such measures within the design of the Proposed Development demonstrates a commitment to implementing the identified measures.

5.6.5 A Commitments Register is detailed within Volume 1, Appendix 3.1: Commitments Register of the ES.

Embedded Mitigation

5.6.6 In line with guidance (IEMA, 2004), it is considered to be usual practice to assess potential impacts and consequent effects arising from a project's current design, incorporating all embedded (primary and tertiary) mitigation that an applicant is committed to. Therefore, within this ES, embedded measures that will form part of the design of the Proposed Development (and/or are established legislative requirements/good practice) have been taken into account in the assessments presented in each topic chapter. The initial determination of impact magnitude and significance of effects, therefore, assumes implementation of these measures. This ensures that the measures that the Applicant is committed to are taken into account in the assessment of effects.

Further Mitigation and Residual Effects

5.6.7 For further (secondary) measures, which require further activity, both pre-mitigation and residual effects are presented (i.e. these are further mitigation

measures). The assessment of residual effects, with further mitigation in place, is presented after the initial assessment within each topic chapter within this ES.

5.6.8 Once agreed by the Applicant, all mitigation measures are recorded in the Commitments Register, which includes details of how each measure will be secured. The Applicant has actively encouraged stakeholders to propose mitigation commitments throughout consultation.

Enhancement

5.6.9 In some cases, the measures identified through the iterative EIA process or stakeholder consultation will result in the enhancement of environmental conditions. Enhancement measures are identified within the Commitments Register (Volume 1, Appendix 3.1: Commitments Register of the ES).

Monitoring

5.6.10 Monitoring commitments may be put in place, as and when necessary, to assess the effectiveness of mitigation measures and validate assessment conclusions.

5.6.11 All monitoring measures are recorded in the Commitments Register (see (Volume 1, Appendix 3.1: Commitments Register of the ES), with details of how each measure will be secured.

5.7 Approach to EIA

Environmental Baseline

5.7.1 In order to undertake an assessment of likely significant effects, it is essential to develop an understanding of the current condition of the environmental baseline.

5.7.2 The baseline for the assessment of environmental effects has primarily been drawn from evidence collated during the review of desktop data, consultation and any site-specific environmental surveys. The specific methodology used to characterise the environmental baseline for each topic is described in the relevant chapters.

Assessment of Effects

Impacts and Effects

5.7.3 The Proposed Development has the potential to create a range of 'impacts' and consequent 'effects' on the physical, biological and human environment. The definitions of impact and effect used in this assessment are drawn from the Design Manual for Roads and Bridges (DMRB) LA104 (Highways England et al., 2020). The DMRB was devised for linear transport schemes but can be applied to any infrastructure project, including linear cable routes. The DMRB provides overarching descriptions and matrices that can be applied to all technical topics within the EIA process. These are described further in this section.

5.7.4 For the purposes of the ES, the term 'impact' is defined as a change that is caused by an action. For example, the installation of a cable (action) is likely to require excavation of trenches (impact). Impacts can be defined as direct or

indirect. They can be either positive/beneficial or adverse, although the relationship between them is not always straightforward and relies on available evidence and professional judgement. Additionally, the duration of an impact can be characterised as short, medium or long-term and permanent or temporary.

5.7.5 The term 'effect' is defined as the consequence of an impact on a receptor. For example, the excavation of a cable trench (impact) results in the loss of grassland habitat (effect).

5.7.6 The 'significance' of each effect is determined by considering the magnitude of the impact alongside the sensitivity or importance of the receptor/receptor group in accordance with the defined significance criteria.

Defining the Sensitivity of the Receptor

5.7.7 For the purpose of this ES, receptors are defined as the physical or biological resource or human user group that could be affected by the impacts of the Proposed Development. These receptors are identified through available data and baseline studies that have been reviewed in the preparation of this ES.

5.7.8 In defining the sensitivity for each receptor, the vulnerability, recoverability and value/importance have been taken into consideration. The determination of the sensitivity of a receptor for each topic draws upon relevant external guidance and other material, including specialist knowledge relevant to that topic. Each topic chapter within this ES (Volumes 2, 3 and 4) sets out the definitions of sensitivity used for that assessment. Where no topic-specific guidance is available, the definitions of sensitivity are based on the definitions set out in **Table 5.5**.

Table 5.5: Sensitivity of receptor definitions

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 scale, limited potential for substitution
Low	Low or medium importance and rarity, local scale
Negligible	Very low importance and rarity, local scale

Terminology based on DMRB LA104 (Highways England et al., 2020)

Defining the Magnitude of Impacts

5.7.9 For each of the impacts assessed in this ES, a magnitude has been assigned. The magnitude of an impact considers factors such as the spatial extent, duration, frequency and reversibility of the impact from the construction, operation and maintenance, or decommissioning phases.

5.7.10 The determination of the magnitude of impact for each topic draws upon relevant external guidance and other material, including specialist knowledge relevant to that topic. Each topic chapter within this ES sets out the definitions of impact magnitude used for that assessment. Where no topic-specific guidance is available, the definitions are based on the definitions set out in **Table 5.6.**

Table 5.6: Magnitude of impact definitions

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

Terminology based on DMRB LA104 (Highways England *et al*., 2020)

5.7.11 The following definitions are also used for short, medium, and long term effects:

- 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.

Evaluation of Significance of Effect

5.7.12 The overall significance of an effect is evaluated by considering the magnitude of the impact and the sensitivity of receptor. Each chapter defines the approach taken to the assessment of significance. Unless set out otherwise within the topic chapter, a matrix approach has been adopted as a guide (see **Table 5.7**).

Table 5.7: Matrix used for the assessment of the significance of the effect

Sensitivity	Magnitude of Impact				
	No Change	**Negligible**	**Low**	**Medium**	**High**
Negligible	No Change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No Change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No Change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No Change	Minor	Minor or Moderate	Moderate or Major	Major
Very high	No Change	Minor	Moderate or Major	Major	Major

Matrix based on DMRB LA104 (Highways England et al., 2020)

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

5.7.14 Professional judgement has been used to define the magnitude of impact and receptor sensitivity. The matrix has then been used, together with professional judgement, to evaluate the significance of the effect. In general, a significance of effect of moderate or greater is considered 'significant' in EIA terms. For each topic chapter within the ES, what is considered 'significant' is clearly defined.

5.7.15 In cases where a range is suggested for the significance of effect, the significance is based upon the expert's professional judgement. The broad definitions for each of the significance levels are shown in **Table 5.8**.

Table 5.8: Definition of significance levels for the Proposed Development

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

Terminology based on DMRB LA104 (Highways England *et al*., 2020)

Addressing Uncertainty

5.7.16 There is some degree of inherent uncertainty within the EIA process. There is uncertainty in relation to future improvements to construction and design. In addition, there is uncertainty in relation to future baseline conditions, such as the potential effects of climate change on existing receptors. There is also a degree of uncertainty in terms of the margin of error within forecasting or modelling tools. The following sections set out the approach to addressing uncertainty within this ES. In all cases where uncertainty exists, this has been identified (and quantified where possible) within the relevant chapter of the ES, together with details of the measures that have been taken to reduce uncertainty as far as reasonably practicable.

Future Baseline and Assessment Years

5.7.17 Consideration has been given to any likely changes between the time of baseline data collection / survey and environmental trends that might give rise to a different future baseline in the relevant assessment years for the construction, operation and maintenance, and decommissioning phases of the Proposed Development. In some cases, these changes may include the construction or operation of other planned developments in the area. Where such developments are built and operational during writing and data collection, these are considered part of the baseline environment. Where sufficient and robust information is available, such as expected traffic growth figures, other future developments are considered as

future baseline conditions. In all other cases, planned future developments are considered within the assessment of cumulative effects.

5.7.18 The consideration of future baseline conditions has taken into account the likely effects of climate change, as far as these are known at the time of writing. It is recognised that there is some element of uncertainty regarding future trends in environmental conditions and climate. Where accepted methodologies for identifying the likely effects of climate change are available, these have been considered in the assessment. For example, the Met Office Hadley Centre publishes probabilistic climate change projections for the UK, termed the UKCP18 dataset (Met Office Hadley Centre, 2018). Published documents such as the UK Climate Change Risk Assessment 2017 (Climate Change Committee, 2017) and subsequent updates have also been taken into account. Recent published research has also been reviewed to inform judgements on whether specific receptors are susceptible to the effects of climate change.

Forecasting and Modelling

5.7.19 Where forecasting and modelling tools are used, care has been taken to ensure that the tool selected is appropriate for the assessment, taking into account topic-specific good practice and guidance. Model assumptions are described, and calibration has been used to ensure a reasonable degree of accuracy in measurements. In addition, uncertainty has been addressed by undertaking modelling for a number of scenarios and at representative points across the Proposed Development, where applicable. Topic chapters within the ES set out the measures taken to address any uncertainty with regard to modelling inputs and outputs.

Assessment of Cumulative Effects

5.7.20 The EIA Regulations require consideration of cumulative effects, which are effects on a receptor that may arise when the Proposed Development is considered together with other proposed developments in the area.

5.7.21 The cumulative effects assessment (CEA) for the Proposed Developments has been undertaken in accordance with the following guidance:

- The Planning Inspectorate's Advice on Cumulative Effects Assessment. (Planning Inspectorate, 2024d); and
- Cumulative Impacts Assessment Guidelines: Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms (Renewable UK, 2013).

5.7.22 The Planning Inspectorate's Advice on Cumulative Effects Assessment recommends that the CEA should take into account developments that are:

- under construction;
- permitted application(s), but not yet implemented;
- submitted application(s) not yet determined;
- projects on the National Infrastructure Planning Portal's Programme of Projects;
- projects identified in relevant development plans; and
- projects identified in other plans and programmes as may be relevant.

5.7.23 A requirement of undertaking CEA is to identify those projects, plans or activities with which the Proposed Development may interact to produce a cumulative effect. These interactions may arise within the construction, operation and maintenance or decommissioning phases. The process of identifying those projects, plans or activities for which there is the potential for an interaction to occur is referred to as 'screening'.

5.7.24 A process has been developed in order to methodically and transparently screen the projects, plans and activities that may be considered cumulatively alongside the Proposed Development and produce a 'long list'. The following factors have then been used to refine the long list to create a short list to be taken forward for each topic.

- Data confidence: data confidence has been taken into account when screening projects, plans and activities into or out of the CEA. The premise is that projects, plans and activities with a low level of detail publicly available cannot meaningfully contribute to a CEA and, as such, are screened out.
- Conceptual overlap: for a conceptual overlap to occur it must be established that an impact has the potential to directly or indirectly affect the receptor(s) in question. In EIA terms, this is described as an impact-receptor pathway and is defined here as a conceptual overlap.
- Physical overlap: a physical overlap refers to the potential for impacts arising from the Proposed Development to overlap spatially with those from other projects, plans and activities on a receptor basis. This means that, in most examples, an overlap of the physical extent of the impacts arising from two (or more) projects, plans or activities must be established for a cumulative effect to arise. Exceptions to this exist for certain mobile receptors.
- Temporal overlap: in order for a cumulative impact to arise from two or more projects, a temporal overlap of impacts arising from each must be established. It should be noted that some impacts are active only during certain phases of development, such as piling noise during construction. In these cases, it is important to establish the extent to which an overlap may occur between the specific phase of the Proposed Development and other projects, plans or activities.

5.7.25 All projects, plans or activities identified as being taken forward to the CEA process are 'tiered' in accordance with the guidance set out in the Planning Inspectorate's Advice (Planning Inspectorate, 2024d). This allows the level of certainty associated with the project, plan, or activity to be considered. These tiers are categorised as per the below:

- Tier 1:
  - under construction
  - permitted applications under the Planning Act or other regimes but not yet implemented
  - submitted applications under the Planning Acting or other regimes but not yet determined
  - all refusals subject to appeal procedures not yet determined.
- Tier 2:
  - projects on the Planning Inspectorate's programme of projects

- Tier 3:
  - projects on the Planning Inspectorate's programme of projects where a scoping report has not been submitted
  - identified in the relevant Development Plan and emerging Development Plans, with appropriate weight given as they near adoption, recognising that there will be limited information available on the relevant proposals
  - identified in other plans and programmes, as appropriate, which set the framework for future development consents or approvals, where such development is reasonably likely to come forward

5.7.26 Where practicable, the methodology used to assess cumulative effects follows that used to assess the effects of the Proposed Development alone. This approach is employed in order to maintain consistency throughout each topic chapter within this ES and to allow relevant comparisons to be made. This approach, however, differs between topic chapters according to several factors, such as the nature of the topic, the cumulative projects, plans and activities included for that topic, the data available for each project, plan and activity and the specific practicalities around undertaking CEA for that discipline. As such, while all topics have, in the first instance, aimed to undertake a full quantitative assessment, this has not been possible throughout. In select cases the assessment presented employs a mix of qualitative and quantitative or wholly qualitative assessment.

5.7.27 Volume 1, Appendix 5.3: Cumulative Effects Assessment Screening Matrix of the ES provides details of the approach to identifying other developments to be considered. It also provides an initial list and location of cumulative projects, plans and activities.

5.7.28 The findings of the CEA are presented in each of the topic chapters of this ES.

Cumulative Effects Assessment with the Alverdiscott Substation Connection Development

5.7.29 As detailed within Volume 1, Chapter 3: Project Description of the ES, the development required at the existing Alverdiscott Substation site to provide connection to the national grid (referred to as the 'Alverdiscott Substation Connection Development) will be delivered by National Grid Electricity Transmission (NGET). This is envisaged to include development of a new 400 kV substation, and other extension modification works to be confirmed by NGET.

5.7.30 This ES considers likely cumulative effects associated with the Alverdiscott Substation Connection Development as it will be necessary to facilitate a connection to the national grid.

Inter-related Effects

5.7.31 Inter-relationships between topics may lead to a greater environmental effect in combination with each other than they otherwise would when considered in isolation. This can take the form of different impacts within the same topic through the lifetime of the Proposed Development, (construction; operation and maintenance, and decommissioning) and the effects on receptors between different topics.

5.7.32 The approach to the assessment of inter-related effects has been based on the Planning Inspectorate's Advice Note Nine section 4.13 (Planning Inspectorate, 2018) which states that:

'interactions [or inter-relationships] between aspect assessment includes where a number of separate impacts, e.g. noise and air quality, affect a single receptor such as fauna'

5.7.33 Inter-related effects are considered within this ES in Volume 4, Chapter 5: Inter-related Effects, of the ES.

Transboundary Effects

5.7.34 Transboundary effects arise when impacts from a project within one European Economic Area (EEA) state affect the environment of another state(s). The need to consider such transboundary effects has been embodied by the United Nations Economic Commission for Europe Convention on EIA in a Transboundary Context (commonly referred to as the 'Espoo Convention'). The Espoo Convention requires that assessments are extended across borders between parties of the Espoo Convention when a planned activity may cause significant adverse transboundary effects.

5.7.35 The Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process (Planning Inspectorate, 2024) sets out the procedures for consultation in association with an application for development consent, where such development may have significant transboundary effects. The note sets out the roles of the Planning Inspectorate, other states and developers.

5.7.36 Applicants should provide information about the potential for transboundary effects, as part of:

- the scoping request under Regulation 8 of the EIA Regulations; and
- the suite of documents provided as part of the application for development consent.

5.7.37 The Applicant has notified the Planning Inspectorate of the potential for transboundary impacts arising from the Proposed Development through the request for a Scoping Opinion.

5.7.38 The identification and screening of transboundary impacts is presented in Volume 1, Appendix 5.2: Transboundary Screening of the ES.

5.7.39 Where relevant, the assessment of transboundary effects for each receptor group is included in the relevant topic chapters of this ES.

Downstream Effects

5.7.40 For completeness, when interpreting the requirements of the EIA Regulations, the EIA has also had regard to the recent judgment of the Supreme Court in R (on the application of Finch on behalf of the Weald Action Group) v Surrey County Council concerning the assessment of 'likely downstream impacts'. In this judgement, it was found that the likely downstream impacts on climate change of an oil extraction project included the eventual combustion of the oil. Those impacts should therefore be within the scope of a compliant EIA.

5.7.41 As part of this EIA, the individual topic chapters (see Volumes 2, 3 and 4) consider the likely direct and indirect impacts arising during the construction, operation and maintenance, and decommissioning phases of the Proposed Development. In addition to the likely direct and indirect impacts of the Proposed Development, the climate change chapter (see Volume 4, Chapter 1: Climate Change of the ES) also assesses the cumulative effect of the overall Project. In relation to downstream impacts, the climate change chapter has considered:

- the use of the low/zero carbon electricity (i.e. estimating the potential savings in Greenhouse Gas emissions resulting from the use of the low/zero carbon renewable energy generated by the Project); and
- the end of life of the Project (i.e. decommissioning effects). The decommissioning emissions that have been quantified relate to direct on-site fuel emissions. The relevant downstream emissions include end of life treatment. As stated in paragraphs 1.13.5-6 of Volume 4, Chapter 1: Climate Change, the majority of products are left *in-situ*, or assumed to be highly recyclable. As such, these emissions have been assumed to be immaterial in the context of climate change.

5.7.42 However, as the uses of the electricity once transmitted to the national grid are extremely diffuse, it is not possible to undertake a meaningful and proportionate assessment of the specific downstream uses of the low / zero carbon electricity beyond its contribution to decarbonising the national grid.

5.8 References

Centre for Environment, Fisheries and Aquaculture Science (Cefas) (2012) Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects. Report reference: ME5403 – Module 15.

Climate Change Committee (2017) UK Climate Change Risk Assessment 2017 Evidence Report.

Department for Energy Security and Net Zero (DESNZ) (2023a). Draft Overarching National Policy Statement for Energy (NPS EN-1). Available at: https://assets.publishing.service.gov.uk/media/655dc190d03a8d001207fe33/overarching-nps-for-energy-en1.pdf (Accessed: October 2024).

Department for Energy Security and Net Zero (DESNZ) (2023b). Draft National Policy Statement for Renewable Energy Infrastructure (NPS EN-3). Available at: https://assets.publishing.service.gov.uk/media/655dc352d03a8d001207fe37/nps-renewable-energy-infrastructure-en3.pdf (Accessed: October 2024).

Department for Energy Security and Net Zero (DESNZ) (2023c). Draft National Policy Statements for Electricity Networks Infrastructure (NPS EN-5). Available at: https://assets.publishing.service.gov.uk/media/655dc25e046ed400148b9dca/nps-electricity-networks-infrastructure-en5.pdf (Accessed: October 2024).

Department for Levelling Up, Housing (2024) National Planning Practice Guidance. Available at: https://www.gov.uk/government/collections/planning-practice-guidance (Accessed: October 2024).

Highways England, Transport Scotland, Welsh Government, Department for Infrastructure (2020) Design Manual for Roads and Bridges (DMRB) LA 104, Environmental assessment and monitoring, Revision 1. Available: https://www.standardsforhighways.co.uk/dmrb/search/0f6e0b6a-d08e-4673-8691-cab564d4a60a. (Accessed: October 2024).

IEMA (2004) Guidelines for Environmental Impact Assessment. IEMA, Lincoln.

IEMA (2015) Environmental Impact Assessment Guide to: Shaping Quality Development.

IEMA (2016) Environmental Impact Assessment Guide to: Delivering Quality Development. IEMA, Lincoln.

IEMA (2017) Delivering Proportionate EIA - A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice. IEMA, Lincoln.

Met Office Hadley Centre (2018). UK Climate Projections UKCP18 [Online]. Available at: https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index (Accessed: October 2024).

Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope.

Planning Inspectorate (2020a) Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping.

Planning Inspectorate (2024a) Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents Advice Note Six: Preparation and submission of application documents.

Planning Inspectorate (2024b). Nationally Significant Infrastructure Projects: Advice on Habitats Regulations Assessments.

Planning Inspectorate (2024c). Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process.

Planning Inspectorate (2024d). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment.

Planning Inspectorate (2024e). Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive.

Planning Inspectorate (2024f) Advice Note Three: EIA Consultation and Notification.

RenewableUK (2013) Cumulative Impact Assessment Guidelines: Guiding Principles for Cumulative Impact Assessment in Offshore Wind Farms.