The Great Grid Upgrade

North Humber to High Marnham

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North Humber to High Marnham

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nationalgrid

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5. Environmental Impact Assessment Approach and Methodology

5.1 Introduction

5.1.1 This chapter describes the approach and general methodology which has been used to identify and assess the likely significant effects on the natural, human and built environment resulting from the North Humber to High Marnham Project (the Project), as informed by **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** within the Environmental Statement (ES).

5.1.2 This chapter is supported by the following appendices:

- **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report**;
- **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**; and
- **Application Document 6.5.A3 Appendix 5.3 Scoping Response Tables.**

5.2 The Environmental Impact Assessment Process

The Statutory Process of Environmental Impact Assessment

5.2.1 Environmental Impact Assessment (EIA) is a statutory process that ensures the likely significant environmental effects of a proposed development are identified, assessed and taken into account as part of decision-making.

5.2.2 For Nationally Significant Infrastructure Projects (NSIPs), the EIA Process is governed by The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations') (HM Government, 2017).

Screening and Scoping

5.2.3 Under Regulation 8 of the EIA Regulations (HM Government, 2017), an applicant may seek a screening opinion from the Secretary of State (SoS) to determine whether their proposed NSIP constitutes 'EIA development'. Projects of a type listed in Schedule 1 of the EIA Regulations (HM Government, 2017) comprise development require mandatory EIA, while those listed in Schedule 2 of the EIA Regulations (HM Government, 2017) require EIA where they are likely to give rise to significant environmental effects.

5.2.4 Under Regulation 10 of the EIA Regulations (HM Government, 2017), an applicant may request a scoping opinion from the SoS, informed by an EIA Scoping Report, to define the scope and level of detail of the environmental assessments to be undertaken. The SoS consults prescribed consultees before adopting and publishing their scoping opinion, which guides the subsequent assessments.

Assessment and Mitigation of Likely Significant Effects

5.2.5 The systematic identification, prediction and evaluation of the likely significant environmental effects of a proposed development is undertaken through topic-specific assessments. These are supported by baseline data collection and the application of appropriate methodologies to identify and predict the impacts and effects associated with the construction, operation and (where relevant) decommissioning of the proposed development.

5.2.6 The assessment is iterative and informs the evolution of a proposed development, enabling environmental considerations to be embedded within the overall design.

5.2.7 Likely significant effects are assessed by having regard to the sensitivity, value or importance of environmental receptors and resources, and the magnitude of change (impact) predicted to occur.

5.2.8 Mitigation is identified in accordance with the mitigation hierarchy; this comprises measures to avoid, prevent or reduce, and where necessary, offset (compensate) adverse effects. Mitigation measures may include embedded design features, good practice construction measures, and specific topic-based mitigation. Where appropriate, enhancement measures are also identified to deliver environmental benefits.

5.2.9 Commitments to mitigation and monitoring are secured through the Development Consent Order (DCO) application, ensuring that the measures identified in the ES are implemented and, where necessary, their effectiveness is monitored.

Consultation and Preparation of Environmental Information

5.2.10 The EIA process is supported by ongoing consultation with statutory consultees, local authorities, stakeholders and the public.

5.2.11 'Environmental information', as defined in Regulation 3(1) of the EIA Regulations (HM Government, 2017), includes the ES, any further information provided, and any representations made by consultees regarding the environmental effects of the proposed development.

5.2.12 When applied to an NSIP, the environmental information to be provided by the applicant is reported in the following documents:

- EIA Scoping Report – An EIA Scoping Report sets out the potential likely significant effects from a project (scope) based upon the information available at the time of scoping about the proposed development, and then identifies the form and nature of the assessments required to be undertaken to identify if the potential likely significant effects remain. It also presents the data collected and the proposed assessment methodology and approaches to be adopted in the EIA.
- Preliminary Environmental Information Report (PEIR) – A PEIR sets out the information that '*is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development*' (Regulation 12(2)(b) of the EIA Regulations (HM Government, 2017). The PEIR is presented by an applicant to consultees to help inform their consultation responses during the statutory consultation[1] and is published

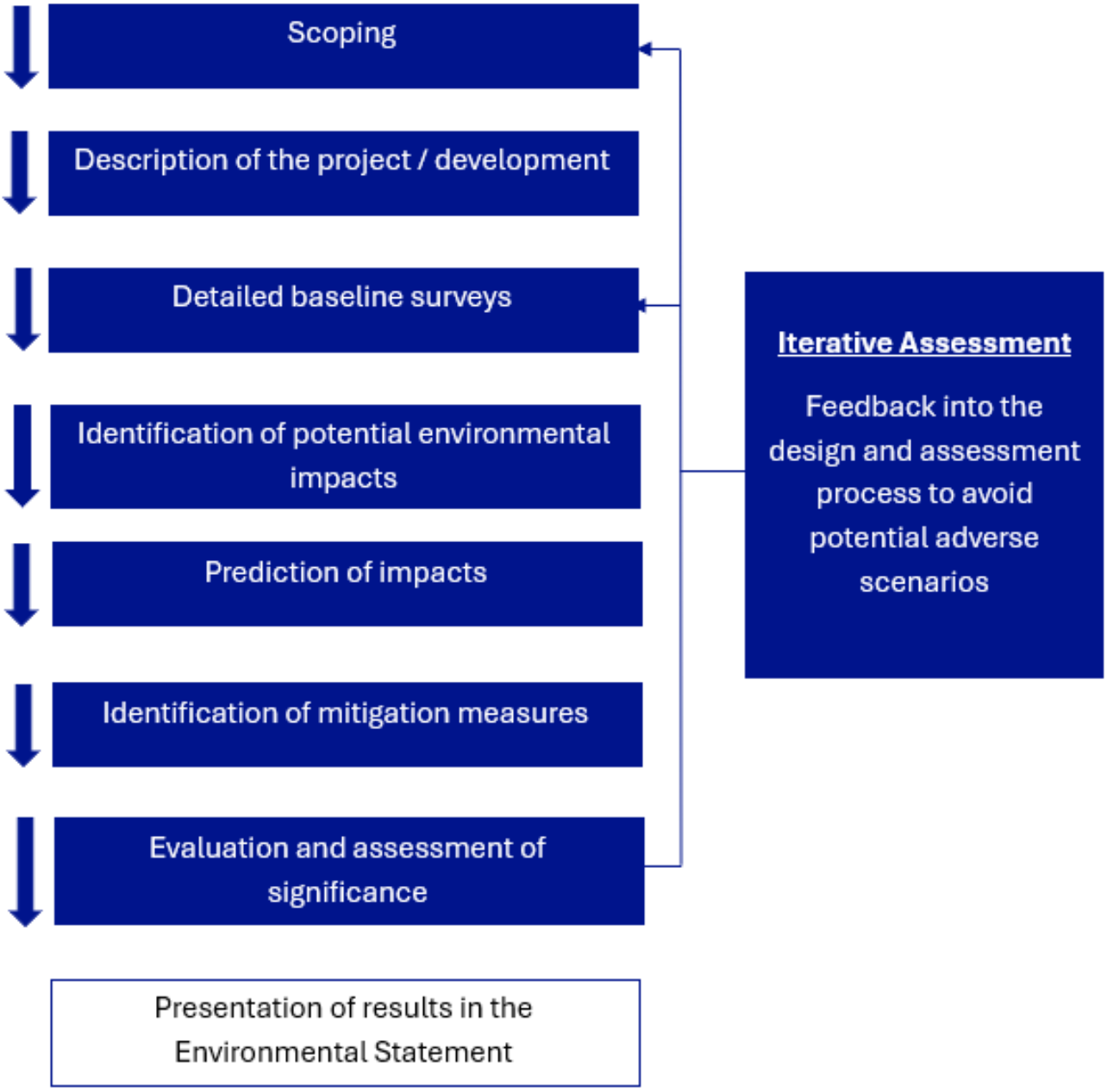
[1] Statutory consultation under Section 42 of the Planning Act 2008 (HM Government, 2008).

at the same time the statutory consultation launches. The PEIR represents a snapshot in time' of the ongoing environmental assessment process.

- ES – An ES presents the results of the assessments carried out as part of the EIA process undertaken for a proposed development. The ES is submitted as part of the DCO application and is prepared by the applicant in accordance with Regulation 14 and Schedule 4 of the EIA Regulations (HM Government, 2017). It includes:
  - a description of the proposed development;
  - an assessment of likely significant environmental effects;
  - measures to avoid, prevent, reduce or offset adverse effects;
  - an outline of reasonable alternatives considered and reasons for selection; and
  - a non-technical summary.

5.2.13 Image 5.1 illustrates the main stages of the environmental assessment and ES reporting, including the iterative interactions between the assessment and project design processes.

Image 5.1 – Assessment and ES reporting stages



Examination and Further Information

5.2.14 Following submission, the DCO application and the environmental information are examined by an appointed Examining Authority on behalf of the SoS.

Decision-Making and Reasoned Conclusion

5.2.15 In accordance with Regulation 21 of the EIA Regulations (HM Government, 2017), the SoS must examine the environmental information and reach a reasoned conclusion on the likely significant environmental effects of a proposed development. Their decision must reflect environmental considerations, including mitigation measures and, where appropriate, monitoring requirements to ensure the effectiveness of those measures.

5.3 Project Classification as EIA Development

5.3.1 A screening exercise was undertaken by National Grid Electricity Transmission plc (National Grid) to establish whether the Project constitutes 'EIA development' as defined by the EIA Regulations (HM Government, 2017).

5.3.2 The Project falls within Schedule 1, paragraph 20 of the EIA Regulations (HM Government, 2017), which applies to the 'Construction of overhead electrical power lines with a voltage of 220 kV or more and a length of more than 15 km'.

5.3.3 As the Project comprises a 400 kV electricity transmission line over a distance of approximately 90 km, of which more than 15 km consists of overhead line, it was determined that it constitutes Schedule 1 development and therefore statutory EIA was mandatory.

5.4 Overview of the EIA Scoping Stage

5.4.1 The process of scoping and the preparation of an EIA Scoping Report is a common approach for determining the EIA scope, i.e. what environmental aspects will be considered, what methods of assessment will be used, and how conclusions will be reached regarding the significance of environmental effects.

5.4.2 **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report** was prepared and submitted by National Grid to the Planning Inspectorate on 21 August 2023. This report presented a Scoping Boundary which defined the area within which the infrastructure would be located, including the temporary and permanent construction and operational work areas.

5.4.3 The Planning Inspectorate provided **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** on behalf of the SoS for the Department for Energy Security and Net Zero on 29 September 2023. This takes account of responses from prescribed consultation bodies[2], relevant statutory undertakers[3], local authorities[4], and non-prescribed consultation bodies as appropriate. These have subsequently informed the assessment work and further design. National Grid has responded to the points raised in **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**, and detailed how each point is addressed in the relevant chapters. **Application Document 6.5.A3 Appendix 5.3 Scoping Response Tables** provide responses to the comments made by the prescribed consultees at the EIA scoping stage and how each comment has been considered.

5.4.4 **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report** and **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** reflect the information available at the time they were prepared. The results of further baseline investigations have required modifications to be made to aspects of the EIA scope, for example the need to undertake additional surveys beyond those proposed in **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report** and/or identified in **Application Document 6.5.A2**

[2] Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the 'APFP Regulations') (HM Government, 2009)

[3] 'Statutory Undertaker' is defined in the APFP Regulations as having the same meaning as in Section 127 of the Planning Act 2008 (HM Government, 2008)

[4] As defined in Section 43(3) of the Planning Act 2008 (HM Government, 2008)

Appendix 5.2 Scoping Opinion. Similarly, any changes to the Project resulting from further technical or environmental investigations, or through changes brought about in response to consultation, have influenced the scope. A summary of the scope of the assessment which is based on **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**, consultation and stakeholder engagement and further design and baseline information is presented in section 3 of each of the environmental topic chapters (**Application Documents 6.6 to 6.21**).

5.4.5 A summary of **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** together with a response from National Grid against each point of relevance to overarching comments on the EIA methodology and assessment scope are provided in Table 5.1.

Table 5.1 – Scoping Opinion responses on the EIA methodology and assessment scope

ID	Planning Inspectorates' comments	Response
2.2.1	**Description of alternatives:** The Scoping Report describes the approach taken so far to develop the route corridor and how environmental matters have been taken into account in the refinement of the scoping boundary. The Inspectorate notes the proximity to local settlements and that designated sites remain within the scoping boundary. The Inspectorate also directs the Applicant to the Environment Agency's consultation response (Appendix 2 of the Scoping Opinion) in relation to the presence of land in Flood Zones 2 and 3, and the Canal and River Trust's response in relation to navigable waterways (namely Chesterfield Canal and Stainforth & Keadby Canal) within the scoping boundary. The ES should describe how the presence of these, and other environmental constraints, has continued to inform subsequent design choices, such as siting of particular elements of the infrastructure or the use of particular construction technologies. With reference to the iterative design process in Image 5.1 of the Scoping Report, the ES should demonstrate how these choices have been influenced by environmental factors.	The Scoping Boundary has now been refined to form the Order Limits. This refinement has taken account of the feedback received through both rounds of non-statutory consultation, as described in section 5.6, **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**, statutory consultation and further environmental, socio-economic and technical work. Details of how the Project has been refined in response to feedback received and environmental constraints are presented in **Application Document 6.3 Chapter 3 Main Alternatives Considered** and the **Application Document 5.9 Design Development Report**. Responses to points raised by the Environment Agency and the Canal and Rivers Trust at the EIA scoping stage are provided in **Application Document 6.5.A3 Appendix 5.3 Scoping Response Tables**.
2.2.2	**Biodiversity Net Gain (BNG):** The Inspectorate notes that the Applicant is committing to provide 10% BNG as part of the Proposed Development. Clarity should be provided to distinguish any measures described in the ES which are	Section 8 of **Application Documents 6.6 to 6.19** sets out the mitigation measures that each residual effects assessment takes account of and how these are secured in **Application Document 3.1 Draft Development**

ID	Planning Inspectorates' comments	Response
	provided as mitigation, as compensation, or developed as part of the commitment to BNG. The Applicant should ensure that these measures are appropriately secured in the dDCO and described within the ES.	**Consent Order**. These are categorised as embedded mitigation measures, control and management measures, and additional mitigation measures. A separate Biodiversity Net Gain (BNG) report is provided at **Application Document 7.1 Biodiversity Net Gain Report**. This report presents specific BNG measures. These measures are not relied on in making the residual effects assessment presented in the ES. BNG is secured through Requirement 14 of **Application Document 3.1 Draft Development Consent Order**.
2.2.3	**Choice of route corridor option technology:** The Inspectorate notes the Applicant's proposal to place the new line parallel to the existing 400 kV line, on the basis it is considered to concentrate the impact in one place rather than creating new impacts elsewhere. The ES should expand on the reasons for the choice of route and method for installation, taking into account environmental considerations.	The reasons for the selection of the preferred corridor and Order Limits, including where close parallel sections have been included, are set out in **Application Document 6.3 Chapter 3 Main Alternatives Considered** and **Application Document 5.9** Design Development Report. **Application Document 6.4 Chapter 4 Description of the Project** describes how the Project would be constructed and **Application Document 7.3 Register of Environmental Actions and Commitments** sets out all the measures that have been embedded into the design to avoid or reduce environmental effects.
2.2.4	**Decommissioning:** The Applicant identifies that the new overhead line would have a lifespan of 80 years and that decommissioning is not therefore scoped into the assessment. The Inspectorate notes that there is potential for the Proposed Development to involve the removal or replacement of pylons from an existing 400 kV overhead line as part of the 'line swap over' process. Where swap overs are needed the ES should consider the effects of decommissioning existing pylons and those sections of the line where the swap overs occur.	A description of dismantling is provided in **Application Document 6.4 Chapter 4 Description of the Project**. Where dismantling of existing pylons is proposed as part of the Project, this has been assessed within **Application Documents 6.6 to 6.19**.
2.2.5	**Value of receptor:** The proposed approach to the value of receptors in	The term 'international' presented in the high, medium, small and negligible

ID	Planning Inspectorates' comments	Response
	Table 5.2 refers to defining the value of receptors based on international importance, with no reference to receptors of national, regional, or local importance. The proposed approach to setting the geographical value of receptors should also take account of and define sites or features of national, regional, or local importance. The ES should ensure that the criteria used for the assessment are defined such that it is easy to follow the methodology used.	sensitivity criteria in Table 5.2 in **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report** was included by error. Table 5.4 (below) has been amended to reflect the correct definitions and the inclusion of national, regional and local importance.
2.2.6	**Judgements on significance of effects:** Where professional judgement is used to determine whether an identified effect is significant or not significant in the ES, this decision should be supported by clear reasons and evidence and make reference to any relevant guidance.	The residual effects assessments presented in section 9 of **Application Documents 6.6** to **6.19** provide reasons to support the conclusion of significance where professional judgement has been used, making reference to relevant guidance where appropriate.
2.2.7	**Major effects:** The proposed approach to the 'major' sensitivity criterion refers to sites and features of national importance. The Inspectorate considers that the 'major' sensitivity criterion should also consider effects on sites or features of international importance.	Table 5.5 (below) has been updated to include international importance.
2.2.8	**Cumulative Effects Assessment (CEA) – consultation:** The Applicant should seek to agree the size of study area and the list of plans or projects for inclusion within the CEA with the relevant local authorities, taking into account the zones of influence for different aspect assessments.	The inter-project cumulative effects assessment is presented in **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects.** The cumulative Zone of Influence takes account of the study areas of each of the different topic chapters set out in **Application Documents 6.6** to **6.19**, and **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects** describes how this has been defined. The study areas and the approach to the ZOI was consulted on as part of the PEIR during statutory consultation and where comments were received these have been taken into account in **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects**.
2.2.9	**CEA – short list of projects:** The ES should include an appropriate figure clearly depicting the locations and extent	The inter-project cumulative effects assessment including the zone of influence applied is presented in

ID	Planning Inspectorates' comments	Response
	of projects included in the CEA in relation to the location of the Proposed Development. This should include consideration of those projects that cover a wide geographical area extending beyond the proposed study area or provide justification for why cumulative effects are unlikely to occur. This should include other major renewable energy projects in Lincolnshire and Nottinghamshire. The short list should also reflect the development pressures affecting the Humber Estuary, in particular the potential for effects on land functionally linked to protected sites along the Humber.	**Application Document 6.21 Chapter 21 Inter-project Cumulative Effects**. The locations of the other developments on the short list included in the inter-project cumulative effects assessment are presented in **Application Document 6.21.F2 Figure 21.2 Cumulative Effects Assessment: Short List of Other Developments**. The short list includes projects where there is a potential for a cumulative effect on land functionally linked to the Humber Estuary.
2.2.10	**Compliance with Code of Construction Practice (CoCP):** The Inspectorate notes National Grid will use procedures to audit and inspect compliance with measures within the CoCP. The ES should set out how this will be achieved and secured and describe the process of monitoring and reporting any identified non-compliances. Where non-compliances are identified, the ES outline CoCP should also demonstrate what remedial actions will be taken.	The environmental commitment measures presented in the CoCP at the scoping stage formed the basis of **Application Document 7.3 Register of Environmental Actions and Commitments**. This is secured through Requirement 5 of **Application Document 3.1 Draft Development Consent Order**. **Application Document 7.3 Register of Environmental Actions and Commitments** sets out the monitoring requirement for each commitment and how each commitment is secured. **Application Document 7.2 Outline Code of Construction Practice** details a framework for monitoring, compliance auditing and inspection of agreed environmental aims to check that the aims are met.
2.2.11	**General points on CoCP:** The Inspectorate makes the following comments on the measures within the outline CoCP to individual measures referenced in Appendix 4A: • The relationship between the EIA, CoCP, Construction Environmental Management Plan, Landscape and Ecological Management Plan, Site Waste Management Plan and Construction Traffic Management Plan should be set out, using appropriate figures or diagrams for ease of	Section 1 of **Application Document 7.2 Outline Code of Construction Practice** lists the suite of environmental management plans that sit alongside the Code of Construction Practice and section 6 sets out for each topic assessed within the ES which management plan the mitigation measures relied on are contained. Section 3 of **Application Document 7.2 Outline Code of Construction Practice** sets out the roles and responsibilities.

ID	Planning Inspectorates' comments	Response
	understanding of the scope and purpose of the documents; • the responsibilities of each identified role within the CoCP should also be set out, using appropriate diagrams or figures to allow for ease of understanding of the management hierarchy; • how liaison with local authorities and other relevant consultation bodies will be incorporated into the CoCP; • where more than one contractor is responsible for construction works, how the Applicant will ensure consistency of CoCP measures across multiple construction contractors and / or work sites; • how the standard of reinstatement will, as a minimum, meet the recorded pre-construction condition; • the steps to be taken to reduce the potential for measures to be employed that are outside of the terms of the CoCP; • the frequency of liaison with the local community and how this will be achieved and managed, with reference to the CoCP roles and responsibilities; • how the Applicant will measure and control the quality of reinstatement measures and what remedial measures will be used where pre-construction conditions are unlikely to be met; • where vegetation is to be removed, this should be within the parameters of the assessment presented within the EIA; • 'high grade trees' should be defined, with reference to the ecology and biodiversity assessment, arboricultural strategy methodology (Appendix 8.C) and subsequent arboricultural assessment; • any replacement roost or structures such as hibernacula for reptiles should be installed and available in advance	Section 3 of **Application Document 7.2 Outline Code of Construction Practice** sets out how liaison with local authorities and other relevant consultation bodies form part of the roles and responsibilities and how these will be incorporated into the Final CoCP by the Main Works Contractor(s). Environmental commitment measures relating to the standard of reinstatement are included within **Application Document 7.3 Register of Environmental Actions and Commitments**. Section 5 of **Application Document 7.2 Outline Code of Construction Practice** sets out a framework for community engagement and public information. Trees and hedgerows to be removed are shown on **Application Document 2.13 Trees and Important Hedgerows to be Removed or Managed Plans**, these have been assessed by the relevant topic chapters in the ES. **Application Document 7.14 Arboricultural Impact Assessment** sets out the location of high grade trees within the study area and how these will be impacted by the Project. **Application Document 6.8 Chapter 8 Ecology** has used the information provided within **Application Document 7.14 Arboricultural Impact Assessment** to inform the assessment of likely significant effects on habitats where appropriate. **Application Document 7.8 Outline Landscape and Ecology Management Plan** details measures for replacement habitats. How duration has been applied varies depending on each topic's methodology. How duration is applied in each topic assessment is set out in section 4 of **Application Documents 6.6** to **6.19**.

ID	Planning Inspectorates' comments	Response
	of any removal of any existing roost or resting place structures and in line with relevant guidance; and • the duration of 'temporary' activities should be defined.	
2.2.12	**CoCP – use of Horizontal Directional Drilling (HDD):** The CoCP should include consideration of the potential for HDD to be used during construction. This should include the measures to avoid potential pollution, a requirement for risk assessment for the use of drilling muds and details of liaison and permitting requirements with the Environment Agency.	No sections of undergrounding are proposed on the overhead line. There is the requirement to underground lower voltage and telecommunication third party services that are crossed by the proposed overhead line which will include the use of trenchless crossings to cross, for example, roads and some watercourses. The proposed trenchless crossings are detailed in **Application Document 6.4.A4 Appendix 4.4 - Indicative Third Party Schedule** and are assessed in **Application Document 6.12.A4 Appendix 12.4 - Preliminary Qualitative Groundwater Risk Assessment**. Measures are included within **Application Document 7.3 Register of Environmental Actions and Commitments** to avoid pollution and for detailed risk assessments to be produced by the Main Works Contractor(s).
2.2.13	**Linear assessments:** The Inspectorate considers that given the linear nature and distance of the Proposed Development, that the assessment should be clear on where effects are considered to be project-wide, or where effects are associated with particular sections of the route.	The assessments presented in the **Application Documents 6.6** to **6.21** present a receptor-based assessment where the effects of all contributing parts of the Project that have an impact pathway to affect a receptor have been taken into account in determining the level of effect on that receptor. Route Sections of the Project have been referenced to provide geographical context or structure where appropriate, rather than determine the boundaries of assessment.
2.2.14	**Transboundary:** The Scoping Report states that the transboundary matrix is presented in Appendix 1A, however this Appendix has not been provided. The Inspectorate notes that it has an ongoing duty in relation to consideration of transboundary effects and will undertake a separate transboundary screening	Reference to Appendix 1A in **Application Document 6.5.A1 Environmental Impact Assessment Scoping Report** was made in error. A transboundary screening was undertaken by the Planning Inspectorate (Planning Inspectorate, 2024) on behalf of the SoS for the purposes of

ID	Planning Inspectorates' comments	Response
	exercise on behalf of the SoS under Regulation 32 of the EIA Regulations following adoption of the Scoping Opinion. The Inspectorate recommends that where Regulation 32 applies, the ES should identify whether the Proposed Development has the potential for significant transboundary effects and if so, what these are and which European Economic Area (EEA) States would be affected. Note: The SoS' duty under Regulation 32 of the 2017 EIA Regulations continues throughout the application process. The Inspectorate's screening of transboundary issues is based on the relevant considerations specified in the Annex to its Advice Note Twelve, available on our website at http://infrastructure.planninginspectorate.gov.uk/legislation-andadvice/advicenotes	Regulation 32 of the EIA Regulations (HM Government, 2017). This concluded the Project is not likely to have a significant effect on the environment in a European Economic Area State, and therefore no further action is required at this stage.
2.2.15	**Receptors:** For the avoidance of doubt, when considering disruption to receptors using PRoW, this should include consideration of users of the Yorkshire Wolds Way National Trail, other national trails within the study area and, where relevant, the England Coast Path and coastal access routes.	The assessment of users of public rights of way (PRoWs) is presented in **Application Document 6.7 Chapter 7 Visual**, **Application Document 6.14 Traffic and Transport** and **Application Document 6.17 Socio-economics, Recreation and Tourism** and includes receptors using PRoWs, the Yorkshire Wolds Way National Trail and promoted routes within the study areas for the relevant environmental topics. The England Coast Path and coastal access routes are not located within the study areas of relevant environmental topics.

5.5 Overview of the Preliminary Environmental Information Stage

5.5.1 As part of the pre-application process for a development consent application, applicants are required to undertake consultation with relevant consultees about their project proposals. This consultation feedback is then used to shape the final proposals within the application for development consent. As part of this, applicants are required under the EIA Regulations (HM Government, 2017) to prepare a PEIR, which sets out the information that '…*is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development*'.

5.5.2 A PEIR (National Grid, 2025) was prepared by National Grid as part of the statutory pre-application consultation process required under Sections 42 and 47 of the Planning Act 2008 (HM Government, 2008). The PEIR was published in February 2025, enabling consultees and interested parties to develop an informed view of the environmental effects of the Project and provide comments on that basis.

5.5.3 Further details on the consultation stages and the feedback received can be found in **Application Document 5.1 Consultation Report**. The consultation responses from prescribed consultation bodies[5],that are particularly pertinent to the EIA are summarised within the relevant ES topic chapters **Application Documents 6.6** to **6.21**.

5.6 Environmental Impact Assessment Methodology

5.6.1 This section describes the methodology which has been used to assess the potential effects on the natural, human and built environment as a result of the Project. In accordance with the EIA Regulations (HM Government, 2017) the assessments undertaken have identified the likely significant environmental effects arising from the proposed construction, operation and maintenance phases of the Project as described in **Application Document 6.4 Chapter 4 Description of the Project**.

5.6.2 The primary objective of the environmental assessment is to identify likely 'significant' effects, since it is these effects that must be reported in the ES. This is undertaken by first predicting impacts and then evaluating their severity against agreed significance criteria.

5.6.3 The prediction, quantification and evaluation of an impact and the significance of resulting effects is typically undertaken by considering the relationship between two factors:

- The magnitude of an impact (that is, the actual change taking place to the environment); and
- The value/importance of the affected baseline resource or receptor and its sensitivity to the impact.

Technical Scope

5.6.4 The scope of the assessment is based on what was presented within **Application Document 6.5.A1 Appendix 5.1 Environmental Impact Assessment Scoping Report**. It has also been updated based on the response given in **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion**.

5.6.5 The environmental topics scoped in comprise:

- Landscape;
- Visual;
- Ecology (including aquatic ecology);
- Ornithology;

[5] Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the 'APFP Regulations') (HM Government, 2009)

- Cultural heritage;
- Water environment;
- Geology and hydrogeology;
- Agriculture and soils;
- Traffic and transport;
- Air quality;
- Noise and vibration;
- Socio-economics, recreation and tourism;
- Health and wellbeing;
- Climate change;
- Intra-project cumulative effects; and
- Inter-project cumulative effects.

5.6.6 The technical scope of the assessment for each environmental aspect is detailed in the topic chapters (**Application Documents 6.6** to **6.21**). Some environmental topics only have a small number of aspects scoped into their assessment or may only consider construction effects if significant operational (and maintenance) effects were scoped out at the scoping stage.

5.6.7 The technical scope also details the approach to baseline data collection and assessment methodologies.

Spatial Scope

5.6.8 The spatial scope for each environmental aspect is the area over which changes to the environment are predicted to occur as a consequence of the Project. This depends on the nature of the potential impacts and the location of receptors that could be affected, and takes account of:

- The area of land required to construct, operate and maintain the Project;
- The nature of the baseline environment (receptors); and
- The manner and extent to which environmental effects may occur.

5.6.9 Each of the topics (**Application Documents 6.6** to **6.21**) describe the study area considered, providing a clear explanation as to why that particular study area has been adopted. The spatial scope of each assessment has been refined for the ES in response to comments from consultees, refinement of the Project design or further assessment work.

Temporal Scope

5.6.10 Subject to gaining development consent, construction would be expected to start in 2028 and would be completed by 2033[6] inclusive of reinstatement.

[6] Note: Although these are the expected construction dates, the DCO may authorise a time limit for commencement of development up to five years after receiving consent.

5.6.11 This ES has predicted the changes (impacts) to the current and future baseline during the construction and operation phases of the Project. The general approach is summarised below, and any variations from this are identified and discussed in the relevant topic chapters:

- Baseline year: The baseline is the reference level of the environmental conditions without implementation of the Project, against which the potential effects of the Project are assessed. The baseline year is 2025, when the majority of baseline surveys took place. For certain topics the baseline environment is expected to change between the baseline year and the start of the construction of the Project (expected to be 2028), and for these topics this change has been predicted to enable robust identification of the effects of the Project against a future baseline.
- Construction phase: These are effects that are likely to occur during the construction phase of the Project. These include effects resulting from the activities associated with the construction of the proposed overhead line. It also includes effects associated with the temporary working areas such as haul roads, construction compound areas, pylon working areas and construction work activities.
- Operational phase: These are effects that would potentially occur as a result of the presence, operation and maintenance of the Project.

5.6.12 The environmental assessment uses defined temporal scales to characterise the duration of potential effects. The following definitions are applied unless otherwise defined in the specific topic chapter:

- Permanent – these are effects that would remain even when the Project is complete, although these effects may be caused by environmental changes that are permanent or temporary.
- Temporary – these are effects that are related to environmental changes associated with a particular activity and that would cease when that activity finishes.

5.6.13 The temporal nature of effects could be different to the phase in which the effects occur. For example, effects as a result of vegetation clearance during construction may be experienced for a number of years after construction has been completed, before any replacement planting has established and matured. Within this ES, the effects are described under the phase within which the impact arises (i.e., in the above example, vegetation loss is assessed for the construction phase).

5.6.14 The future baseline is the theoretical situation that would exist in the absence of the Project. This is based upon extrapolating the current baseline using technical knowledge of likely changes to predict this (e.g., predictable changes such as climate change, changes that can be predicted based on reasonable assumptions and modelling calculations, information about other relevant developments).

5.6.15 Each topic chapter of the ES has defined the baseline (current, future or both) against which the environmental effects of the Project have been assessed. The baseline conditions assessed for each environmental topic are outlined in **Application Documents 6.6** to **6.21** of this ES. Where relevant, topic chapters provide further information on the temporal elements within the Project programme that have been considered for their assessment.

Assessment of Effects and Determination of Significance

5.6.16 The prediction of potential effects has been undertaken to determine what could happen to each environmental receptor because of the Project and its associated activities. The likely significant effects (beneficial and adverse) of the Project have been predicted and evaluated using appropriate evaluative techniques, many of which follow topic-specific best practice guidelines.

Identification of potential effects

5.6.17 Potential effects have been identified, in summary, as an indication of what effects could theoretically occur in the absence of mitigation (other than mitigation inherent in the design of the Project, i.e. embedded mitigation measures).

5.6.18 As consent for the Project will be sought through a Development Consent Order (DCO), all categories of mitigation will be the subject of a DCO requirement to secure their delivery and make their implementation a legal requirement. Iterative assessment of the design of the Project has ensured that mitigation measures have been included and assessed as part of the Project. Therefore, potential significant effects prior to mitigation measures being implemented are not reported in this ES unless guidance relevant to the environmental topic chapter requires potential effects to be reported prior to mitigation.

Approach to mitigation

Mitigation hierarchy

5.6.19 The mitigation hierarchy is a stepped process that helps development projects to address potentially adverse effects on the environment. The Overarching National Policy Statement for Energy (EN-1) (Department for Energy Security and Net Zero, 2025) states '…*the applicant must set out information on the likely significant environmental, social and economic effects of the development, and show how any likely significant negative effects would be avoided, reduced, mitigated or compensated for, following the mitigation hierarchy*'. The EIA Regulations (Regulation 14(2)(c)) (HM Government, 2017) also requires an ES to include '*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*'.

5.6.20 The mitigation hierarchy has been applied to the Project throughout the iterative design process and with the following considered:

- Avoid – the first step of the mitigation hierarchy comprises measures taken to avoid creating effects from the outset, such as careful spatial placement of infrastructure away from receptors, or timing construction sensitively to avoid their disturbance.
- Prevent – these include measures to remove the effect at source or disrupt the impact pathway, such as adopting standard pollution prevention techniques in line with good practice to prevent watercourses becoming polluted.
- Reduce – these are measures taken to reduce the duration, intensity and/or extent of effects that cannot be completely avoided, for example acoustic screening of noisy construction activities or landscape planting to filter views during operation.

- Offset (sometimes referred to as compensate) – where relevant and appropriate to the specific effect, these measures aim to compensate for any residual adverse effects after full implementation of the previous three steps of the mitigation hierarchy.

5.6.21 The approach to mitigation has been iterative, involving close working between National Grid, the EIA team and the Project designers.

Embedded, control and management, and additional mitigation measures

5.6.22 A number of measures will be adopted in the Project to avoid and reduce the likely significant effects that would be experienced during implementation of the Project. These fall into one of three categories: embedded measures, control and management measures, and additional mitigation measures.

5.6.23 Embedded mitigation measures are those that have sought to avoid an impact and are intrinsic to and built into the design. They include, for example, routeing and siting the proposed overhead line within the existing topography to reduce pylon intrusion, siting the proposed overhead line in close parallel to existing transmission lines as far as possible, inclusion of clear span bridges for the temporary crossings of certain watercourses, and inclusion of environmental commitments to protect and retain certain features within the Order Limits.

5.6.24 Control and management measures comprise management activities, control measures and techniques that would be implemented during construction of the Project to limit impacts. They include adherence to good site practices and achieving legal compliance. These measures may include, for example, applying construction site dust suppression techniques within working areas.

5.6.25 Additional mitigation measures comprise measures over and above any embedded and control and management measures, for which the EIA has identified a requirement to further reduce significant environmental effects. These include landscape planting for the loss of landscape features that it has not been possible to avoid, and to filter views from settlements.

5.6.26 Mitigation measures are set out in **Application Document 7.3 Register of Environmental Actions and Commitments** and have been coded according to category of mitigation. Relevant mitigation measures that have been relied on in determining the residual effects are defined in section 8 of **Application Documents 6.6** to **6.19**.

Enhancement

5.6.27 The Overarching National Policy Statement for Energy (EN-1) (Department for Energy Security and Net Zero, 2025) details that projects should not only mitigate effects following the mitigation hierarchy, but they should also consider whether there are any opportunities for enhancement. Enhancement proposed as part of the Project comprises:

- Biodiversity Net Gain (BNG) – the Project is committed to delivering at least 10% BNG. Further detail can be found within **Application Document 7.1 Biodiversity Net Gain Report**.
- Opportunities to enhance the interpretation, understanding and appreciation of heritage assets affected by the Project. This will be informed, in part, by the results of archaeological works set out in **Application Document 7.9 Outline**

Archaeological Written Scheme of Investigation. As such, **Application Document 7.10 Outline Cultural Heritage Management Plan** includes provision for feasible enhancement measures to be discussed and agreed between the Applicant and the Archaeological Advisors to the relevant local planning authorities

5.6.28 Enhancement measures are not considered as part of the Project for the purpose of identifying and assessing likely significant effects.

Determination of residual significance

5.6.29 There is no statutory definition of what constitutes a 'significant' effect within the EIA Regulations (HM Government, 2017). The process typically involves consideration of the sensitivity and/or value of the receptor or resource, and the magnitude of the impact on the receptor/resource.

5.6.30 The significance of the residual effects has been determined by reference to criteria for each aspect. Specific criteria have been used for each aspect chapter though all give due regard to the following:

- Scale of the impact;
- Impact duration, and whether effects are temporary, reversible, or permanent;
- Effect nature (whether direct or indirect, reversible or irreversible, beneficial or adverse);
- Whether the effect occurs in isolation, is cumulative, or will interact with other effects;
- Performance against any relevant environmental quality standards;
- Sensitivity of the receptor; and
- Compatibility with environmental policies.

5.6.31 The significance of the residual effects (those that are predicted to remain after all the environmental mitigation measures have been implemented) has been determined by reference to criteria for each assessment topic as detailed above. In doing so, the assessment also takes account of whether effects are temporary or permanent (as these characteristics influence how significance is judged).

5.6.32 Each topic chapter of this ES (**Application Documents 6.6** to **6.21**) includes a description of the approach to determining the significance of effects, including how professional judgement has been applied. The topic chapters use the terminology for magnitude, sensitivity and significance described in the following sections unless there is a need to deviate due to topic-specific guidance. Where there is a requirement to deviate, justification is provided within the topic chapter.

Sensitivity and value of the receptor

5.6.33 The sensitivity of a receptor or resource is characterised by its vulnerability to change and its ability to recover. The value of a receptor or feature reflects its overall importance, and the value placed on it by society; this may be reflected by its level of statutory or policy protection or else a value may be attributed through consultation and the application of professional judgement. Criteria for defining the sensitivity and/or value of a receptor are set out in Table 5.2. Characterisation of the receptor is

achieved by balancing the following considerations to determine the receptor's sensitivity:

- Vulnerability – the vulnerability of the receptor relates to its capacity to accommodate change, i.e. the tolerance/intolerance of the receptor to change.
- Recoverability – the ability of the receptor to return to the baseline state.
- Importance – the importance of the receptor is a measure of the value assigned to that receptor based on biodiversity and ecosystem services, social value and economic value. Importance of the receptor is also defined within a geographical context, whether it is important internationally, nationally or locally.

Table 5.2 – Value/sensitivity criteria

Value/sensitivity	General criteria
Very High	Of value, importance, or rarity on an international scale and with very limited potential for substitution; very sensitive to change or has very little capacity to accommodate change.
High	Of value, importance, or rarity on a national scale and with limited potential for substitution; and/or sensitive to change or has little capacity to accommodate change.
Medium	Of value, importance, or rarity on a regional scale and with limited potential for substitution; and/or moderately sensitive to change, or moderate capacity to accommodate change.
Low	Of value or importance on a local scale; not particularly sensitive to change or has considerable capacity to accommodate change.
Negligible	Very low importance and rarity, valued at a local level, easy to replace.

Magnitude of impact

5.6.34 General criteria for defining the magnitude of an impact, or change, are set out in Table 5.3. Key factors that influence this include:

- Scale of change – the scale of change refers to the degree of change to or from the baseline environment caused by the impact.
- Spatial extent – the extent of an impact is the full area over which the impact occurs.
- Duration and frequency – the duration is a measure of how long the impact is expected to last. Frequency refers to how often the impact would occur; it may be continuous or periodic.

Table 5.3 – Impact magnitude criteria

Magnitude	General criteria
Large	Adverse: Loss/alteration of resource and/or quality and integrity of resource; severe damage to key characteristics, features, or elements. Beneficial: Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.
Medium	Adverse: Loss/alteration of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements. Beneficial: Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.
Small	Adverse: Some measurable alteration in attributes, quality or vulnerability; minor loss of, or alteration to, one (or more) key characteristics, features or elements. Beneficial: Minor benefit to, or addition of, one (or more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk or negative impact occurring.
Negligible	Adverse: Very minor loss or detrimental alteration to one or more characteristics, features or elements. Beneficial: Very minor benefit to, or positive addition of, one or more characteristics, features or elements.

Sensitivity and value of the receptor

5.6.35 The sensitivity of a receptor or resource is characterised by its vulnerability to change and its ability to recover. The value of a receptor or feature reflects its overall importance, and the value placed on it by society; this may be reflected by its level of statutory or policy protection or else a value may be attributed through consultation and the application of professional judgement. Criteria for defining the sensitivity and/or value of a receptor are set out in Table 5.4. Characterisation of the receptor is achieved by balancing the following considerations to determine the receptor's sensitivity:

- Vulnerability – the vulnerability of the receptor relates to its capacity to accommodate change, i.e. the tolerance/intolerance of the receptor to change.
- Recoverability – the ability of the receptor to return to the baseline state.
- Importance – the importance of the receptor is a measure of the value assigned to that receptor based on biodiversity and ecosystem services, social value and economic value. Importance of the receptor is also defined within a geographical context, whether it is important internationally, nationally or locally.

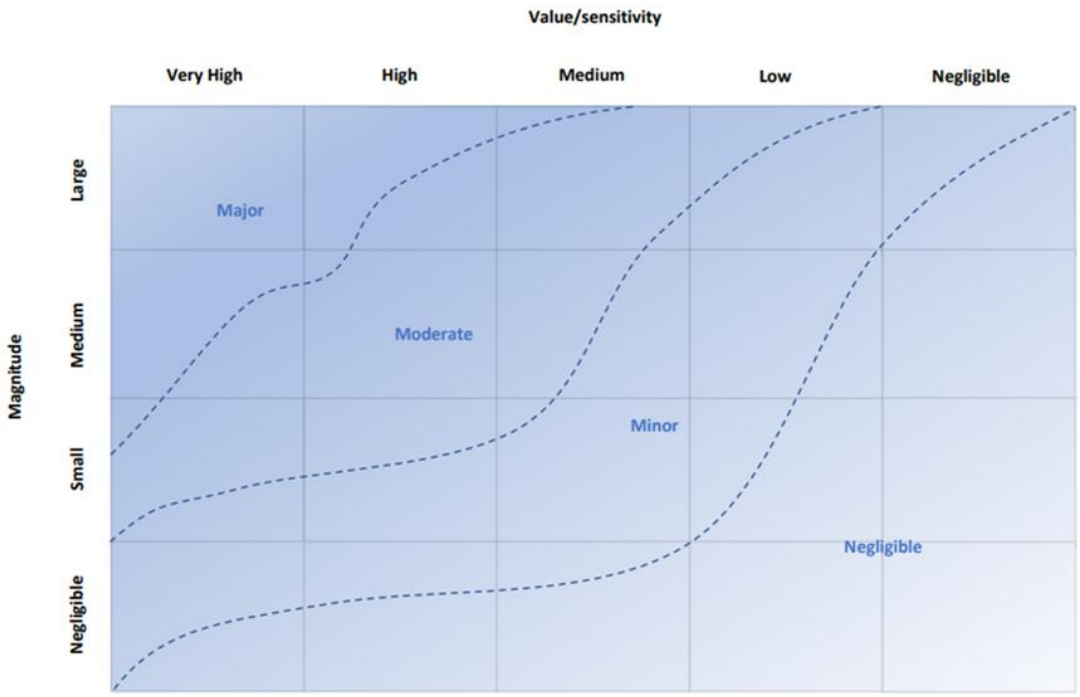
Table 5.4 – Value/sensitivity criteria

Value/sensitivity	General criteria
Very High	Of value, importance, or rarity on an international scale and with very limited potential for substitution; very sensitive to change or has very little capacity to accommodate change.
High	Of value, importance, or rarity on a national scale and with limited potential for substitution; and/or sensitive to change or has little capacity to accommodate change.
Medium	Of value, importance, or rarity on a regional scale and with limited potential for substitution; and/or moderately sensitive to change, or moderate capacity to accommodate change.
Low	Of value or importance on a local scale; not particularly sensitive to change or has considerable capacity to accommodate change.
Negligible	Very low importance and rarity, valued at a local level, easy to replace.

Evaluating the residual significance of effects

5.6.36 Having established the magnitude of impact and sensitivity of the receptor, the significance of an effect can be assessed. To aid transparency in the assessment process, the matrix shown on Image 5.2 has been used as the basis for assigning significance to an effect; however, the identification of significance typically requires the application of professional judgement. As an illustration, a high sensitivity receptor subject to a large magnitude of impact would experience a major or moderate significance effect, and a low sensitivity receptor subject to a small magnitude of change would experience a minor or negligible significance effect.

Image 5.2 – Basis of assigning significance



5.6.37 Each of the topic assessments have applied magnitude and sensitivity criteria that best suit the topic area, and for some topics these may be defined in industry guidelines.

5.6.38 Following the classification of an effect using the methodology, a clear statement has been made in each chapter of the ES as to whether that effect is significant or not significant. Major and moderate effects are typically considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement has also been applied in reaching conclusions as to the significance of effects. Generic definitions for the classification of effects are provided in Table 5.5.

Table 5.5 – Generic significance description

Significance	General criteria	Significant effect
Major	A large and detrimental change to a valuable/sensitive receptor; likely exceeding an accepted (often legal) threshold. A large and beneficial change, resulting in improvements to the baseline result in previously poor compliance or a major contribution being made to national targets. These effects may represent key factors in the decision-making process. Potentially associated with sites and features of international and national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features that are unique and which, if lost, cannot be replaced, or relocated.	**Yes**
Moderate	A medium scale change that, although not beyond an accepted threshold, is still considered to be generally unacceptable, unless balanced out by other significant positive benefits of a project. Likely to be in breach of planning policy, rather than legal statute. These effects, if adverse, are likely to be important at a regional or local scale and on their own could have a material influence on decision making. A positive moderate effect is a medium scale change that is significant in that the baseline conditions are improved to the extent that guideline targets (e.g., UK Biodiversity Action Plan targets) are contributed to.	**Yes (typically)**
Minor	A small change that, whilst adverse, does not exceed legal or planning policy thresholds. A small positive change, but not one that is likely to be a key factor in the overall balance of issues. These effects may be raised as local issues and may be of relevance in the detailed design of a project but are unlikely to be critical in the decision-making process.	**No**

Significance	General criteria	Significant effect
Negligible	A very small change that is so small and unimportant that it is considered acceptable to disregard. Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.	**No**

5.7 Design Envelope

5.7.1 Major infrastructure projects, such as linear infrastructure projects for overhead lines, typically need some flexibility to be maintained for detailed design and construction, if conditions are found that would otherwise prevent or delay construction. Examples can include previously unknown archaeological assets or poor ground conditions at pylon locations. To accommodate such issues, a flexible approach to design parameters is used within the assessment process; this is typically referred to as the 'Rochdale Envelope', and it allows for a realistic worst-case assessment to be undertaken. The Planning Inspectorate's Pre-Application Advice on Environmental Impact Assessment (Planning Inspectorate, 2026) outlines the approach that can be taken, in accordance with the requirements of the EIA Regulations (HM Government, 2017).

5.7.2 By developing a realistic worst-case scenario in response to maximum or sometimes minimum technical and engineering parameters, as well as the emerging findings of the environmental assessments and feedback from stakeholders, it is possible to strike a balance between the level of design information needed for the purpose of the ES and the application for development consent, while still retaining the level of design flexibility needed as the Project moves into detailed design and construction.

5.7.3 The environmental assessment process aids and informs the design process and supports the identification of a design 'freeze' that is flexible enough to accommodate change in future stages, but not so flexible that it either cannot be assessed or could overstate or unnecessarily amplify the potential environmental impacts of the Project.

5.7.4 Assessing using a parameter-based design envelope approach means that the assessments have considered a scenario which represents the worst-case for each aspect, whilst allowing the flexibility to make improvements in the future in ways that cannot be predicted at the time of the application for development consent. Development permitted by the DCO will not extend beyond the clearly defined parameters assessed in this ES. For example, defined Limits of Deviation (LoD) are assumed to provide the flexibility to relocate a pylon due to poor ground conditions.

5.7.5 The Planning Inspectorate's Pre-Application Advice on Environmental Impact Assessment (Planning Inspectorate, 2026) provides guidance on how to deal with flexibility of this type as follows:

'The Rochdale Envelope assessment approach is an acknowledged way of assessing a Proposed Development comprising EIA development where uncertainty exists and necessary flexibility is sought.'

- *'the assessment should be based on a cautious 'worst case' approach and the mitigation measures proposed should adequately address the worst case*

- *information should be sufficient to enable the main, or the likely significant effects on the environment to be assessed and the mitigation measures should be described, and*
- *the need for flexibility should not be abused and does not give applicants an excuse to provide inadequate project descriptions'.*

5.7.6 The Rochdale Envelope approach is critical to the routeing of linear energy infrastructure. The proposed route of the linear infrastructure is therefore subject to LoD which will provide a necessary and proportionate degree of flexibility as to the final alignment of the Project. Construction activities may, in places, extend beyond the LoD (which constrain the operational alignment of the Project) but will remain within the Order Limits. All such temporary activities have, however, been assessed on a reasonable worst-case basis within the Rochdale Envelope, and the DCO will not permit development outside the parameters assessed in the ES.

Basis of Assessment

5.7.7 **Application Documents 6.6 to 6.19** in this ES include a section (section 5), which sets out the assumptions that have been made in respect of the design flexibility maintained within the Project.

Flexibility assumptions

5.7.8 To take account of the flexibility allowed in the Project, consideration has been given to the potential for effects to be of greater or different significance, should any of the permanent or temporary infrastructure elements be moved within the LoD design parameters or Order Limits that are explained in **Application Document 6.4 Chapter 4 Description of the Project**. The flexible aspects of the Project are described in Table 5.6.

Table 5.6 – Flexible aspects of the Project

Element of Flexibility	Description
Horizontal LoD	The horizontal LoD is the flexibility for lateral movement of the proposed overhead line. This is generally 100 m (50 m either side of the proposed centreline). In certain locations this has been reduced to less than 100 m to avoid a particular receptor and, in some locations, the LoD are wider to allow for additional flexibility where required. The horizontal LoD is shown on **Application Document 6.4.F1 Figure 4.1 Proposed Project Design**. How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.
Vertical LoD	This is the limit placed on the upward or downward extent of the proposed pylons. Vertical LoDs are provided for each pylon in **Application Document 6.4.A1 Appendix 4.1 Indicative Pylon Schedule**. There is no limit placed on the maximum depth of below ground works. Whilst standard below ground LoD are not

Element of Flexibility	Description
	proposed, the Project would never go deeper than necessary for technical or environmental reasons as this would add engineering operational complexity and cost. How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.
Longitudinal LoD	This is the movement of a pylon along the centreline of the proposed overhead line. There is no overall limit placed on this movement as this is limited by the maximum span the pylon can withstand, the different structural loads acting on the conductors and the rest of the equipment, and the need to maintain statutory clearances to ground and obstacles whilst not exceeding the vertical LoD. How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.
Pylon footprint	This is the footprint of the proposed pylon (the distance between pylon leg/bases). This is provided in **Application Document 6.4.A1 Appendix 4.1 Indicative Pylon Schedule.** The footprint of a pylon may change if the flexibility afforded by the horizontal and vertical LoD are used and could increase or decrease within the range of widths provided in **Application Document 6.4.A1 Appendix 4.1 Indicative Pylon Schedule.** How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.
Foundation types	The foundations for the pylons would either be pad and column, mini pile or tube pile (or bespoke if required). The selection of foundation type would be identified at the detailed design stage by the Main Works Contractor(s) following intrusive ground investigation surveys. A description of each type is provided in section 7 of **Application Document 6.4 Chapter 4 Description of the Project**. How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.
Order Limits – temporary construction works	The location of the temporary construction works is shown on **Application Document 6.4.F3 Figure 4.3 Temporary Construction Works**. Whilst these are the intended locations they could move within the Order Limits (subject to any commitments set out within Application Document 7.3 Register of Environmental Actions and Commitments) for example if a proposed pylon was to move within the LoD's described about the temporary pylon working area would also need to move.

Element of Flexibility	Description
	How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.
Watercourse crossings	**Application Document 6.4.A2 Appendix 4.2 Indicative Bridge and Culvert Schedule** details the proposed crossing type for each watercourse. Temporary bridges will be used for any crossings of main rivers of canals. Where protected species are present flexibility has been included for the crossing to be made by either a bridge or a culvert depending on whether protected species are confirmed as being present during pre-construction surveys. How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.
Modifications to third party assets – construction methodology	Allowance has been made within the design to modify / underground existing lower voltage and telecommunication overhead third-party assets that are crossed by the proposed overhead line. These are illustrated on **Application Document 6.4.F4 Figure 4.4 Third Party Works**. These modifications to third party assets would include placing some assets underground which could include the use of open cut trenching or trenchless techniques to facilitate the crossing of roads or other existing infrastructure. The likely trenchless crossing locations are detailed in **Application Document 6.4.A4 Environmental Statement Appendix 4.4 Indicative Third Party Schedule**. How each topic has assessed this element of flexibility is set out in section 5 of each topic chapter in **Application Documents 6.6 to 6.19**.

Optionality

5.7.9 As set out in Application **Document 6.4 Chapter 4 Description of the Project** and shown on **Application Document 6.4.F3 Figure 4.3 Temporary Construction Works** optionality has been included at the following five locations.

- Two alternative options for temporary construction access between Pennyhill Cottages Primary Access Route (PAR 34) and proposed pylon 4AF82 and satellite construction compound S-3:
  - Bellmouths BM-040/41, associated construction access track and watercourse crossings C-169 and BC-11; or
  - Bellmouths BM-040A/41A off Pennyhill Cottages (PAR 34), associated construction access tracks and watercourse crossings C-220A, C-169A and BC-11A.
- Two alternative options for temporary construction access tracks to proposed pylon 4AF88:

- Watercourse crossing BC-36 and BC-37; or
- Watercourse crossing B-06A.

- Two alternative options for the construction access track between proposed pylons 4AF130 and 4AF131:
  - Watercourse crossing BC-29; or
  - Watercourse crossings BC-29A and BC-29B.
- Two alternative options for taking access off High Melwood (PAR 63) and the associated construction access track:
  - Bellmouth BM-078; or
  - Bellmouth BM-110.
- Two alternative power supply connections to the proposed main construction compound (M1).
  - NPG-09A from the west – there is currently uncertainty whether capacity of the network would be sufficient for this this connection; or
  - NPG-09B from the east.

5.7.10 Where differences in effects between alternative options have been identified, these are set out within section 9 of each topic chapter (**Application Documents 6.6** to **6.19**) with clear reference to the nature, extent, and significance of any resulting effects.

Sensitivity test

5.7.11 Under the terms of the DCO, construction could commence any year up to five years from the granting of the DCO which is assumed to be 2028. Consideration has therefore been given in section 9 of **Application Documents 6.6** to **6.19** as to how sensitive the assessment is to the specific construction year assessed, i.e. whether the effects reported would be any different if works were to commence in any year up to year five.

5.8 Structure of the Environmental Topic Chapters

5.8.1 Each of the topic chapters are structured as follows:

- Section 1: Introduction – provides a summary of what the chapter covers and signposts supporting figures and appendices where applicable.
- Section 2: Regulatory and Planning Context – provides a summary of the topic-specific legislation and policy that is relevant to the Project.
- Section 3: Scoping Opinion and Consultation – sets out the sections of **Application Document 6.5.A2 Appendix 5.2 Scoping Opinion** that are relevant to the environmental topic and stakeholder engagement that has been relevant to the scope of assessment.
- Section 4: Assessment Approach and Methods – provides the relevant guidance, data sources and site survey methodologies where applicable, describes the study area or areas applied, and the methodology used for undertaking the assessment.

- Section 5: Basis of Assessment – sets out how the assessment has taken account of the flexibility and design parameters included within the application for development consent.
- Section 6: Baseline Conditions – describes the characteristics of the baseline conditions for the defined study area and identifies the receptors which have the potential to be impacted. This section also reports on the future baseline.
- Section 7: Potential Effects – describes how construction, operation, and maintenance activities are likely to affect receptors in the study area(s).
- Section 8: Mitigation – presents details of any embedded, control and management or additional mitigation measures that have been identified to prevent, reduce or offset likely significant effects during construction, operation and maintenance.
- Section 9: Residual Effects Assessment – identifies the anticipated residual effects of the Project following the implementation of mitigation during construction, operation and maintenance.

5.9 Cumulative Effects Assessment

5.9.1 When undertaking an assessment of the environmental effects of a project, it is necessary to consider how various effects may interact, and also how these effects could accumulate with the effects of other developments proposed within the same zone of influence.

5.9.2 Schedule 4, paragraph 5, of the EIA Regulations (HM Government, 2017), requires the assessment of cumulative effects stating:

'A description of the likely significant effects of the development on the environment resulting from, inter alia—

… (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources...

The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development'.

5.9.3 The overarching National Policy Statement for Energy (EN-1) (Department for Energy Security and Net Zero, 2025) also states at Section 4.3 that:

'The EIA Regulations require an assessment of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, transboundary, short, medium, and long-term, permanent and temporary, positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects.' (paragraph 4.3.3)

'The Secretary of State should consider how the accumulation of, and interrelationship between, effects might affect the environment, economy, or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place.' (paragraph 4.3.19)

5.9.4 The cumulative effects assessment for the Project includes the assessment of intra-project in **Application Document 6.20 Chapter 20 Intra-project Cumulative Effects** and inter-project cumulative effects in **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects**.

Intra-project Effects

5.9.5 Intra-project cumulative effects (sometimes referred to as combined or interactive effects) occur where a single receptor is affected by more than one source of effect or aspect of a project. An example of an intra-project effect would be where a local community is affected by dust, noise, and traffic disruption during the construction of a project, with the result being a greater level of nuisance than from each individual effect alone.

5.9.6 The methodology for how intra-project cumulative effects have been assessed within this ES and a description of the likely significant intra-project cumulative effects is included in **Application Document 6.20 Chapter 20 Intra-project Cumulative Effects**.

Inter-project Effects

5.9.7 Inter-project cumulative effects occur where a receptor is affected by two or more projects at the same time, potentially amplifying the overall effect. Individually, the effects may not be significant, but when considered together they could create a significant cumulative effect.

5.9.8 The Planning Inspectorate's Advice on Cumulative Effects Assessment (Planning Inspectorate, 2024) provides a methodology for assessing inter-project cumulative effects. It offers guidance about the type and scale of other developments that should be considered in the assessment of cumulative effects.

5.9.9 The methodology for how inter-project cumulative effects have been assessed within this ES, and a description of the likely significant inter-project cumulative effects, is included in **Application Document 6.21 Chapter 21 Inter-project Cumulative Effects**.

5.10 Stakeholder Engagement

5.10.1 Stakeholder engagement has formed a key part of the Project's development since its inception. In accordance with the Planning Act 2008 (HM Government, 2008), supporting guidance and good practice, National Grid has undertaken consultation with relevant bodies and the feedback received has informed the development of the EIA.

5.10.2 National Grid carried out non-statutory pre-application consultation in 2023, localised non-statutory consultation in 2024 and statutory consultation in 2025 and subsequent consultations in 2026. During the 2025 statutory consultation, National Grid held nine public information events along the route, and six webinars. Further details on the consultation events can be found in **Application Document 5.1 Consultation Report**.

5.10.3 National Grid also carried out a number of environmental and thematic meetings with environmental organisations to gather information about the baseline environment, scope of the assessment and potential effects and mitigation. Details of these

meetings are listed within section 3 (Scoping Opinion and Consultation) of each environmental topic chapter (**Application Documents 6.6** to **6.21**).

5.10.4 An overview of how feedback from non-statutory and statutory consultation has informed the development of the Project is provided in **Application Document 5.9 Design Development Report**.

5.10.5 **Application Document 5.1 Consultation Report** includes a summary of the responses received from environmental bodies during non-statutory consultations, statutory consultations and further consultations and how National Grid has given due regard to this feedback when undertaking the EIA and preparing the application for development consent.

5.11 Supporting Documents

Other Reports and Assessments

5.11.1 The application for development consent includes the following documents which have informed the assessment and should be read in parallel:

- **Application Document 5.2 Habitats Regulations Assessment Report** – this provides the Stage 1 Screening and Stage 2 Assessment to inform Appropriate Assessment in accordance with The Conservation of Habitats and Species Regulations 2017 (HM Government, 2017) as to whether the Project affects the integrity of a European designed site.
- **Application Document 5.3 Statement of Statutory Nuisance** – this sets out the potential for the Project to cause statutory nuisance (as defined in Section 79(1) of the Environmental Protection Act 1990 (HM Government, 1990)) and the measures that have been incorporated to mitigate any such potential nuisances.
- **Application Document 5.4 Consents and Licences Required Under Other Legislation** – this sets out at a high level the consents needed to construct the Project and how the consents would be obtained.
- **Application Document 7.11 Electric and Magnetic Field Compliance Report** – this provides an assessment and conclusions of the likely significant health and environmental effects of electric and magnetic fields associated with the construction, operation and maintenance of the Project.
- **Application Document 7.12 Water Framework Directive Assessment** – this sets out the relevant water bodies, together with an assessment of any effects that the Project may cause in relation to these bodies and their objectives for reaching good ecological status or potential.
- **Application Document 7.13 Flood Risk Assessment** – this sets out how the Project has considered flood risk both in terms of designing the Project to be resilient to flooding and how it avoids affecting flood risk elsewhere.
- **Application Document 7.14 Arboricultural Impact Assessment** – this identifies all trees which have the potential to be affected by the Project, assesses the preliminary impact of the Project on those trees, and recommends protection measures as necessary to ensure the health of retained trees.
- **Application Document 7.15 Transport Assessment** – this sets out the assessment that has been undertaken in relation to the effect of the Project on

the strategic and local road networks. It also includes the effects on Non-Motorised Users (such as walkers, cyclists and horse riders) both on the road network and PRoWs.

- **Application Document 7.16 Photomontages** – this contains photomontages which help illustrate what the Project may look like during operation.

Management Plans

5.11.2 The application for development consent includes the following management plans, which provide the securing mechanisms for embedded mitigation measures, control and management mitigation measures and additional mitigation measures identified throughout the EIA process. These are secured through Schedule 2 of **Application Document 3.1 Draft Development Consent Order**.

- **Application Document 7.2 Outline Code of Construction Practice** – this provides further details on how environmental effects and risks would be managed during construction.
- **Application Document 7.3 Register of Environmental Actions and Commitments** – this provides a register of environmental actions and commitments that have been included as part of the Project.
- **Application Document 7.4 Outline Construction Traffic Management Plan** – this provides details on the measures proposed to avoid or reduce effects from the Project on the road network during construction.
- **Application Document 7.5 Outline Soil Management Plan** – this provides the overarching principles that are applicable to all areas that form part of the Project with regards to soil management. This provides details and measures proposed to manage handling of soils during construction, including reinstatement.
- **Application Document 7.6 Outline Public Right of Way Management Plan** – this provides details on the measures proposed to avoid or reduce effects from the Project on PRoWs during construction.
- **Application Document 7.7 Outline Noise and Vibration Management Plan** – this provides the overarching general principles, controls and arrangements that will be applied to the Project with regards to noise and vibration during construction.
- **Application Document 7.8 Outline Landscape and Ecology Management Plan including an Outline Landscape Maintenance and Management Plan** – this provides details on how vegetation would be retained and protected during construction and how vegetation would be reinstated following construction, including the aftercare and maintenance that is proposed.
- **Application Document 7.9 Outline Archaeological Written Scheme of Investigation** – this document sets out the scope, guiding principles and methods for the planning and implementation of essential archaeological mitigation works associated with the design and construction of the Project.
- **Application Document 7.10 Outline Cultural Heritage Management Plan** - sets out the mitigation measures that are relevant to the construction phase of the Project and to specific maintenance activities carried out as part of the operational phase of the Project.

5.12 Monitoring

5.12.1 Schedule 4, Paragraph 7, of the EIA Regulations (HM Government, 2017) is clear that, where appropriate, consideration is given to the appropriateness of monitoring measures where mitigation measures have been proposed to avoid, prevent, reduce or offset likely significant environmental effects. The monitoring requirements are detailed within the ES topic chapters where required. These chapters include clear and proportionate objectives for monitoring, the parameters to be monitored, the methodology for the monitoring, a timescale for implementation, identification of the party who would be responsible for the monitoring, and an outline of the remedial actions to be undertaken should results be adverse.

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