

Supplementary Preliminary Environmental Information Report: Section 5 New Weston Marsh Substations A and B

Volume 3 Part A Introduction and Overview

Chapter 4 Approach to Preliminary Environmental Information

Appendices

November 2025

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Grimsby to Walpole

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4A. Planning Inspectorate Scoping Opinion Responses

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4A. PINS Scoping Opinion Responses

4A.1 Introduction

- 4A.1.1 This appendix includes the National Grid Electricity Transmission (National Grid) response to each of the Planning Inspectorate's (PINS) comments included within the Proposed Grimsby to Walpole Project Scoping Opinion (Ref 1), adopted by the Secretary of State on 10 September 2024.
- 4A.1.2 This appendix was originally published within the June 2025 Preliminary Environmental Information (PEI) Report (Ref 2) for the Grimsby to Walpole Project (the Project), which formed part of the Stage 2 Consultation completed between 11 June and 6 August 2025. Since the publication of the June 2025 PEI Report, further design development work has been completed for Section 5 of the Grimsby to Walpole Project. This has confirmed the requirement for two substations within Section 5, the preferred locations of the new Weston Marsh Substation A and Weston Marsh Substation B and the associated overhead line and underground cable connections. The draft Order Limits for Section 5 have also now been defined, whereas the June 2025 PEI Report was based upon a wider 'Refined Weston Marsh Substation Siting Zone' which covered a greater total area than the draft Order Limits.
- 4A.1.3 This Supplementary PEI Report has therefore been produced to support a Targeted Consultation specifically relating to proposed works within Section 5 New Weston Marsh Substations A and B, referred to as the 'Weston Marsh Targeted Consultation'. This is to ensure that consultees are provided with fuller details of the potential likely significant effects of Section 5 than those presented within the June 2025 PEI Report and during the Stage 2 consultation, such that they are able to prepare well-informed responses to the Weston Marsh Targeted Consultation.
- 4A.1.4 Where information contained within the June 2025 PEI Report (Ref 2) is relevant to the updated preliminary assessment of proposed works within Section 5, it is repeated within this Supplementary PEI Report to aid understanding. As such, this Appendix is again included, along with minor updates to National Grid responses which specifically relate to the proposed inclusion of an underground cable connection between the new Weston Marsh Substations A and B.
- 4A.1.5 The comments provided by PINS are included in **Table 4A.1** under the following sub-headings:
- i. Description of the Proposed Development;
 - ii. Environmental Impact Assessment Methodology;
 - iii. Landscape;
 - iv. Visual;
 - v. Ecology and Biodiversity;
 - vi. Historic Environment;
 - vii. Water Environment and Flood Risk;

- viii. Geology and Hydrogeology;
- ix. Agriculture and Soils;
- x. Traffic and Movement;
- xi. Noise and Vibration;
- xii. Socio-economics, Recreation and Tourism;
- xiii. Air Quality;
- xiv. Health;
- xv. Climate Change; and
- xvi. Major Accidents and Disasters.

Table 4A.1 PINS Scoping Opinion responses

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
Description of the Proposed Development			
ID 2.1.1 (Section 4.7)	Flexibility - pylons	The Scoping Report refers to the potential use of alternative pylon designs (T pylons/ low height steel lattice pylons) as an embedded design measure. The pylon designs should be confirmed in the ES and committed to through the draft Development Consent Order (DCO).	<p>As set out in Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description, based on the current design, standard lattice pylons will be utilised across the majority of the Project. Alternative pylon designs may also be considered, where mitigation (e.g. for landscape and visual effects) is required. As detailed in the Design Development Report published in support of the Stage 2 Consultation (Ref 3), following appraisal of alternative pylon types undertaken as part of the design evolution of the Project, low height pylons have been proposed for a specific section of the overhead line route within New Grimsby West Substation to New Lincolnshire Connection Substation A (Section 2) to minimise impacts on the Lincolnshire Wolds National Landscape (Area of Outstanding Natural Beauty (AONB)). Pylon types within section 5 are detailed within Supplementary PEI Report Volume 3 Part A Appendix 5B Indicative Pylon Schedule.</p> <p>The Project Description within the Environmental Statement (ES) will confirm the pylon design proposed. Where alternative pylon types are included within the design to mitigate effects, appropriate measures to secure these will be included within the draft DCO.</p>
ID 2.1.1 Section 4.7)	Flexibility - pylons	The ES should provide dimensions of the pylons to be constructed. This should include maximum heights and widths of the steel work itself, along with details of the foundations that would be required at each pylon location.	<p>Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description describes the assumed dimensions of the pylons to be constructed, including maximum parameters. Further details are provided in Supplementary PEI Report Volume 2 Part B Chapter 1 Overview of the Section and Supplementary PEI Report Volume 3 Part A Appendix 5B Indicative Pylon Schedule.</p> <p>The ES will provide detail on dimensions of the pylons to be constructed across the entirety of the Project, including maximum parameters, and details of the foundations that would be required.</p>
ID 2.1.1 (Section 4.7)	Flexibility - pylons	The Inspectorate acknowledges that some flexibility may be required for micro-siting of pylons but would expect the proposed locations to be identified within the ES along with any Limits of Deviation (LoD) required (both laterally and vertically, i.e. in terms of the depths of foundations).	<p>The draft Order Limits illustrated within the Supplementary PEI Report accommodate adjustments to the siting of pylons, as described in Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description, which also explains the LoD.</p> <p>The Project Description within the ES and supporting figures will confirm the proposed pylon locations and describe any LoD, both laterally and vertically.</p>
ID 2.1.2 (Section 4.7)	Flexibility - substations	The Scoping Report describes both air insulated or gas insulated substations and notes that the land use requirements differ for each type. The Applicant should make every effort to finalise the type(s) of substations to be constructed. Should this not be possible, a worst case scenario should be described and adopted in the assessment of likely significant effects.	<p>Current design information for the type of substations are defined in Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description. For the purpose of the assessments reported within the PEI Report it has been assumed that all substations would be Air Insulated Switchgear (AIS) substations. This is a reasonable worst case scenario in that AIS substations take up a larger area of land compared to Gas Insulated substations.</p>

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			Similarly, the ES will report the effects of the Project based upon reasonable worst case assumptions. At DCO submission, the design of substations will however be sufficiently developed to determine whether air insulated or gas insulated substations are proposed.
ID 2.1.3 (Section 4.7)	Landscaping	Section 4.7 makes brief reference to potential landscaping. The ES should identify all proposed landscaping and confirm whether any is relied upon to mitigate potentially significant landscape and/or visual effects.	A planting strategy will be provided in the ES which will set out proposals for two types of planting, reinstatement planting and mitigation planting. Reinstatement planting will be provided either in its original location (for temporary removal) or as close to the original location as possible (for example, where cables or conductors do not allow for planting in the original location). Mitigation planting will be provided to reduce effects on receptors. The strategy for planting will be discussed with relevant stakeholders prior to submission of the DCO application and the ES will clearly identify planting relied upon to mitigate potential significant landscape and/or visual effects (Additional Mitigation).
ID 2.1.3 (Section 4.7)	Landscaping	The Applicant should seek to agree the location and types of planting with relevant consultation bodies. The ES should explain and justify the assumptions made in respect of the growth rates of planting proposed to mitigation effects.	National Grid will continue to discuss the planting strategy (including locations and type of proposed planting) with relevant consultation bodies throughout the design development process. The ES will explain and justify assumed growth rates for mitigation planting, including in respect of photomontages illustrating future scenarios, to ensure the visualisations are realistic and credible for the specified timeframe.
ID 2.1.4 (Section 4.8)	Vegetation clearance	The ES should identify where vegetation clearance is required, including the felling of trees. The Inspectorate acknowledges that some flexibility may be required for micro-siting of pylons but would expect the ES to provide clarity on the maximum extent of tree loss and demonstration that the design has sought to avoid or minimise loss of high grade trees.	An arboricultural impact assessment will be undertaken and included in the ES. The development of the design of the Project has and will continue to consider avoiding and/or minimising the loss of trees where practicable, particularly high grade trees. This is explained further within the Supplementary Design Development Report for Section 5 . The ES will provide clarity on the maximum extents of tree loss based upon reasonable worst case assumptions adopted for the purposes of the EIA.
ID 2.1.4 (Section 4.8)	Vegetation clearance	Should any particular pockets of existing vegetation be relied upon to screen any parts of the Proposed Development, the Inspectorate expects their retention to be demonstrably secured.	Should existing vegetation be relied upon to screen any parts of the Project, this will be discussed with the relevant stakeholders and secured through the design and DCO Requirements.
ID 2.1.5 (Section 4.8)	Access tracks	The locations of and types of any culverts/temporary bridges required along the access tracks should also be identified.	Supplementary PEI Report Volume 3 Part A Appendix 5C Indicative Bridge and Culvert Schedule includes the proposed number and type of watercourse crossings required to facilitate temporary and/or permanent access routes. This includes a preliminary indication of whether crossings will be via culverts or temporary bridges. These proposals will be discussed with relevant stakeholders to inform design refinement. The location of and type of culverts/temporary bridges required will therefore be reviewed during further design development, identified in the final design and assessed in the ES.
ID 2.1.5 (Section 4.8)	Access tracks	The ES should confirm whether any access tracks would be left in situ for use during maintenance activities, and if so, identify their	The Supplementary PEI Report illustrates the location of temporary and permanent accesses within Section 5 on

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		locations. Proposed finished levels of any permanent access roads AOD should be identified within the ES (along with any necessary LoDs).	Supplementary PEI Report Volume 2 Part B Figure 1.2 Temporary and Construction Features and Figure 1.3 Permanent and Operational Features. Proposed access tracks within other sections of the Project were illustrated in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Figure 1.2 Temporary and Construction Features and Figure 1.3 Permanent and Operational Features respectively (see figures for Sections 1-4, 6 and 7). The ES will include equivalent information based upon further design refinement, (along with any necessary LoDs) and include information on proposed finish levels of any permanent access roads.
ID 2.1.6 (Para 4.8.42)	Underground cables	In the main, the Scoping Report describes the Proposed Development as comprising an overhead line. However, paragraph 4.8.42 identifies the potential for underground cables using trenchless installation techniques such as Horizontal Directional Drilling (HDD). Should HDD form part of the Proposed Development, all associated infrastructure should be clearly detailed and any likely significant effects from their construction and operation assessed within the ES.	At this stage of the design and as summarised within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description , it is anticipated that use of HDD will be limited to the early works required to underground existing lower voltage utilities to enable construction of the new overhead line and for the construction and installation of underground cables connecting the new Weston Marsh Substation A to the new Weston Marsh Substation B in Section 5. For the construction and installation of underground cabling in Section 5, identified through design development that has taken place since publication of the June 2025 PEI Report, an open cut trench methodology has been assumed as a reasonable worst-case for the purposes of Supplementary PEI Report, but HDD remains an option under consideration. The proposed construction and installation methods will be confirmed and assessed at ES stage, along with a description of any associated environmental management measures.
ID 21.7 (Section 4.10)	Maintenance	The ES should detail the assumptions made in the assessment in terms of, inter alia, the frequency and duration of maintenance activities, the likely locations of maintenance works and anticipated traffic movements.	Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description provides assumptions on maintenance activities. The ES will also provide details of the anticipated maintenance activities and associated traffic movements.
ID 2.1.8 (Para 6.7.3)	Temporary Pylons	Paragraphs 6.7.3 and 7.7.4 refer to the construction and removal of temporary pylons; these have not been mentioned elsewhere in the Scoping Report. If required as part of the Proposed Development, these should be detailed within the project description in the ES.	Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description and Supplementary PEI Report Volume 2 Part B Chapter 1 Overview of the Section and Description of the Project provide details of Section 5 of the Project based upon the current design, including the construction and removal of temporary pylons. Similarly, temporary pylons were discussed within the June 2025 PEI Report Volume 2 Part B Sections 1- 4 and 6-7 (Ref 2) where necessary during construction. The ES will also provide detail on construction and removal of any temporary pylons, based upon further design refinement in advance of submission of the DCO application.
ID 2.1.9 (Para 16.9.4)	Employment	The ES should set out the expected number and nature of employment opportunities during each phase of the Proposed Development. This should be described in the context of the workforce availability in the area at a time when numerous other major projects are anticipated to be constructed. The ES should detail how any mismatch between supply and demand will be	Supplementary PEI Report Volume 2 Part C Chapter 6 Socio-economics, Recreation and Tourism provides assessment of Section 5 the Project upon affected communities, the labour market and strategic visitor attractions. With respect to the labour market, this includes employment, supply chain effects, training

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		addressed and consider the origins of its workforce in all relevant aspect assessments (notably socio economics and traffic and transport). All assumptions made in this regard should be set out in the ES.	and apprenticeship opportunities, as well as any impact on tourism bedspace due to the construction workforce. June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 9 Traffic and Movement (Ref 1) and Supplementary PEI Report Volume 2 Part B Chapter 9 Traffic and Movement describes the methodologies adopted to assess workforce travel, based upon the assumed origins of workers. The preliminary assessments will be updated and reported in the ES. The assessment of effects upon the labour market will consider workforce availability in the region. Assumptions used within the assessments will also be reported in the ES.
ID 2.1.10 (N/A)	Piling	The Scoping Report makes brief references to piling at paragraphs 6.9.5, 7.9.5, 11.7.4 and 12.6.4 and Tables 15.2 and 20.10. The ES should identify the construction methods to be used and ensure they are reflected across the assessment of effects within the ES, in particular the noise and vibration assessment.	Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description provides details of the assumed construction methods within Section 5. The preliminary assessments reported within the Supplementary PEI Report, including assessment of noise and vibration effects, adopt reasonable worst case assumptions with respect to piling methodologies. The description of construction methods will be updated in the ES and assumptions reflected within all of the relevant assessments.
ID 2.1.11 (N/A)	Construction hours	The ES should provide details of the anticipated construction working hours on which the assessment of likely significant effects has been based (including any night-time working required, as indicated in Tables 6.3, 7.3 and 20.10). This should be consistent with the working hours specified in the draft Development Consent Order (dDCO).	Current proposed working hours are detailed in Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description and the Preliminary Code of Construction Practice (CoCP), and will be updated in the ES. It is anticipated that working hours will be secured by a DCO requirement.
ID 2.1.12 (N/A)	Lighting	The proposed lighting for all phases of the Proposed Development should be described within the ES.	Details of the proposed lighting for the Project during all phases (i.e. construction and operation/maintenance) will be provided in the ES.
ID 2.1.13 (N/A)	Vehicle Movements	The number of vehicle movements is key to a number of environmental aspect assessments. The ES should detail the number of anticipated vehicle movements during all phases of the Proposed Development and explain the assumptions upon which these have been established.	Preliminary projections of traffic movements attributable to the Project are included within Supplementary PEI Report Volume 3 Part B Appendices 9A-9C . Details of vehicle movements during all phases of the Project (i.e. construction and operation/maintenance) and the assumptions relied on to establish these will be detailed in the ES.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
Environmental Impact Assessment Methodology			
ID 2.2.1 (Paras 5.3.12-5.3.13)	Decommissioning	The Applicant proposes to scope decommissioning out of the assessment (except the decommissioning works proposed at the existing Grimsby West Substation (in part, or in full) as part of the construction phase of the Project). The Scoping Report anticipates that the transmission of electricity would continue for as long as there is a business case for doing so and states that decommissioning would be subject to separate consenting procedures. The Inspectorate agrees that decommissioning can be scoped out of the ES on that basis that a high-level summary of potential effects for each environmental topic is provided within the ES. The Inspectorate expects this to include a description of likely methods for decommissioning.	<p>With the exception of the decommissioning works proposed at the existing Grimsby West Substation (in part, or in full) as part of the construction phase of the Project, decommissioning has been scoped out of the assessment.</p> <p>At the preliminary stage, the June PEI Report did not detail the likely methods for decommissioning the existing Grimsby West Substation or provide an assessment of effects, which will be presented in the ES.</p> <p>Similarly, while not addressed in the June 2025 PEI Report, a description of the likely methods for the decommissioning of the wider Project will be provided in the Project Description chapter of the ES and each environmental topic chapter for New Grimsby West Substation (Section 1) will provide a high-level summary of the potential effects of decommissioning of the Project, based upon the assumed methods.</p>
ID 2.2.2 (Reference Chapter 3)	Alternatives	Paragraph 3.4.5 of the Scoping Report explains that the Strategic Options Report (SOR) considered onshore and offshore options, the latter of which was discounted due to cost. Paragraph 3.4.6 proceeds to explain that a new primarily overhead line connection was the emerging preference, with no explanation as to why an underground cable was discounted. The ES should provide this detail.	<p>Supplementary PEI Report Volume 2 Part A Chapter 3 Main Alternatives Considered includes a summary of the primary reasons why an overhead line connection is preferred, which relate to consideration of National Policy Statement (NPS) EN-5 (Ref 4) and cost. Reference may also be made to the Grimsby to Walpole and North Humber to High Marnham Strategic Options Report (Ref 5).</p> <p>The ES will include a description of the reasonable alternatives (including underground cables) to the Project, including the main reasons for selection of the preferred design.</p>
ID 2.2.3 (Para 4.6.7)	LoDs	The Inspectorate acknowledges the need for the proposed LoDs. These should be clearly detailed within the ES. All surveys and assessments should be of sufficient spatial scale to incorporate any LoD for all elements of the Proposed Development.	The LoDs are described within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description and will be clearly detailed within the ES. All surveys and assessments are being completed over a sufficient spatial scale to incorporate LoD. The survey and assessment methodologies adopted for each topic assessment (including Study Areas) are described within Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope .
ID 2.2.4 (Para 4.6.14)	Construction Traffic Management Plan	Paragraph 4.6.14 states that commitments regarding the use of electric vehicles or vehicles conforming with emission standards ratings are included in TTO1 and TTO2 in Appendix 4A Initial Outline Code of Construction Practice (CoCP). However, these specific commitments are not included in the Outline CoCP as stated. The Scoping Report also includes several further incorrect references to commitments in the outline CoCP. The Inspectorate acknowledges the Outline CoCP is currently in draft form, however the Applicant should ensure that all measures stated to be included within management documents are included where stated in the final application versions.	<p>The Applicant has ensured that cross references within the Supplementary PEI Report to measures within the Preliminary CoCP are accurate. Measures GG13, CC02 and AQ07 of the Preliminary CoCP are relevant to the use of electric vehicles and vehicle emission standards.</p> <p>Similarly, National Grid will ensure that all measures stated to be included within management documents within the ES are included within the final versions submitted with the DCO application.</p>
ID 2.2.5 (Paras 5.3.15 and 12.7.6)	Duration of Effects	The Scoping Report proposes to assess effects during the phase within which the impact arises. The Scoping Report acknowledges there would be some permanent loss of habitats and agricultural land from the Proposed Development. These impacts would first	National Grid will ensure that the reporting of permanent impacts in relation to the construction phase in the ES, does not underplay

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		arise and therefore be assessed during the construction phase. The Applicant should ensure that assessing such impacts solely during the construction phase does not underplay the potential duration and consequently, the significance of effect. The ES should clearly differentiate between habitat and agricultural land to be lost temporarily (i.e. to be reinstated) and that to be permanently lost.	the potential duration and consequently, the significance of effects. The ES will clearly differentiate between habitat and agricultural land to be lost temporarily and that to be permanently lost. The description of the assessment methodologies adopted for the purposes of the June 2025 PEI Report, this Supplementary PEI and proposed to be adopted for the subsequent ES, is included within Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope and reflects this approach.
ID 2.2.6 (Image 5.3)	Significance of effect	Image 5.3 shows that up to three levels of significance is possible when combining a given value/sensitivity of receptor and a given impact magnitude. For example, a very high value/sensitivity of receptor combined with a small magnitude of impact results in an effect which could be of major, moderate or minor significance. This approach is echoed for some aspects (see Tables 12.9, 13.6, 16.19 and 17.12), but not for all. Where this approach is to be employed, the ES should clearly detail how the final level of significance has been determined and provide justification for not adopting the worst case level of significance from the options available.	The ES will clearly detail how the reported level of significance has been determined and provide justification where the worst case level of significance from the options available is not reported. The description of the assessment methodologies adopted for the purposes of the June 2025 PEI Report, this Supplementary PEI Report and proposed to be adopted for the subsequent ES, is included within Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope and reflects this approach.
ID 22.6 (Image 5.3)	Significance of effect	Where professional judgement is used to determine whether an identified effect is significant or not significant, this decision should be supported by clear reasons and evidence and make reference to any relevant guidance.	Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope describes where the assessment methodologies include application of professional judgement to determine whether an identified effect is significant or not significant and the supporting technical guidance. The conclusions reported within the ES will include evidence and clear reasoning and make reference to relevant guidance where professional judgement is used to determine the reported effects.
ID 2.2.7 (N/A)	Land access	The Inspectorate acknowledges the large scale of the Proposed Development and the high level of survey effort that will be required to characterise the baseline environment. Should any parts of the Study Area not be accessible for surveys, the ES should identify such limitations and detail the assumptions made in the assessments.	The assumptions and limitations upon which the preliminary assessment has been based on are included in Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope , with section-specific assumptions and limitations for Section 5 outlined in Supplementary PEI Report Volume 2 Part B. Those relating to other sections of the route were included within the June 2025 PEI Report Volume 2 Part B. These assumptions and limitations will be reviewed and updated as appropriate within the ES.
ID 2.2.8 (N/A)	Residues and emissions	The ES should provide an estimate, by type and quantity, of anticipated residues and emissions resulting from construction and operation of the Proposed Development, as required by Schedule 4(1)(d) of the EIA Regulations 2017.	The ES will provide an estimate of the anticipated residues and emissions resulting from construction and operation of the Project, by type and quantity. This assessment has not yet been completed for the purposes of the PEI and is therefore not presented within the June 2025 PEI Report or the Supplementary PEI Report.
ID 2.2.9 (Section 5.5)	Cumulative assessments	The Inspectorate appreciates that the projects for inclusion within the cumulative effects assessment are yet to be determined. Given the location of the Proposed Development and proximity to other approved, known and emerging NSIPs, the Applicant should ensure that the geographical scope is sufficient to capture inter-	Supplementary PEI Report Volume 3 Part C Appendix 9A Cumulative Effects Assessment Long List of Committed Developments sets out the longlist of committed developments and other projects for inclusion within the cumulative effects assessment. This is based upon a search of planning application

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		project effects. The Inspectorate notes the comments of North Lincolnshire County Council’s in respect of giving further consideration to the Zone of Influence (Zol) for Traffic and Movement, Agriculture and Soils and Health and Wellbeing. The Applicant should seek to agree the Zols and the list of projects to be included within the assessment with relevant consultation bodies.	<p>within the local area (inclusive of Nationally Significant Infrastructure Projects (NSIPs)). The search radius considers the same geographical extent as that reported at scoping, which is a 10 km Zol. To generate the subsequent shortlist of developments proposed for further assessment of cumulative effects, each topic has defined an appropriate Zol for the cumulative effects assessments based upon professional judgement and supporting industry guidance and these are stated within Supplementary PEI Report Volume 3 Part A Appendix 4C Cumulative Effects Assessment Methodology.</p> <p>National Grid will consider any consultation feedback received on the Zol used to inform the cumulative effects assessment committed development search, via the Stage 2 Consultation and Localised Statutory Consultation for Section 5, and seek to agree the approach with relevant consultation bodies, including Lincolnshire County Council¹.</p> <p>Supplementary PEI Report Volume 3 Part C Appendix 9B Cumulative Effects Assessment Shortlist of Committed Developments details the committed developments and other projects that have been shortlisted for a full cumulative effects assessment, as there is a potential for likely significant cumulative effects. The shortlist has been generated by considering the scale and nature of the projects, and the potential for interactions with the Project across all environmental topics. The full assessment will be reported as part of the ES and as such only the shortlist has been provided as part of the Supplementary PEI Report. The longlist and shortlist of committed developments will be reviewed and updated if required within the ES.</p>
ID 2.2.9 (Section 5.5)	Cumulative assessments	The ES should include an appropriate figure clearly depicting the locations and extent of projects included in the CEA in relation to the location of the Proposed Development	Supplementary PEI Report Volume 2 Part C Figure 9.3 Shortlist of Committed Developments demonstrates the locations and extent of the shortlisted projects included in Supplementary PEI Report Volume 3 Part C Appendix 9B Cumulative Effects Assessment Shortlist of Committed Developments . The longlist and shortlist of committed developments will be reviewed and updated if required within the ES.
ID 2.2.10 (N/A)	Transboundary	Any likely significant transboundary effects should be assessed within the ES. Following the adoption of this Scoping Opinion, the Inspectorate will undertake a transboundary screening, on behalf of the Secretary of State, under Regulation 32 of the 2017 EIA Regulations. The Secretary of State’s duty under Regulation 32 continues throughout the application process.	<p>It is noted that the Planning Inspectorate has undertaken a transboundary screening (Ref 6) and has concluded that the Planning Inspectorate is of the view that the Project is not likely to have a significant effect on the environment in an European Economic Area State.</p> <p>Therefore, this matter has been scoped out of the assessment but will be kept under review and the position confirmed in the ES.</p>
ID 2.2.11 (N/A)	CoCP	The ES has, in some circumstance, relied on measures within the CoCP for the operational or maintenance phases. Given that a CoCP is prepared and implemented for the construction phase, the Applicant should ensure that any measures required for the	The ES will not rely on measures within the CoCP in relation to the management of impacts and effects during operation/maintenance, other than where these relate to stand alone management plans which span the construction and operation of the Project. This includes, for example, measures

¹ It is noted that whilst the PINS Comments referred to North Lincolnshire County Council, following review of consultation responses, this has been corrected to Lincolnshire County Council.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		operational or maintenance phases are secured through an equivalent plan for those phases of development.	within the Landscape Ecological Management Plan (LEMP), which will detail how habitats will be managed and maintained during and post construction (for a five-year aftercare period) and which will be secured through DCO requirements. During operation and maintenance of the Project, National Grid operatives will also be required to adhere with National Grid best practice requirements. Therefore it is not proposed to produce an equivalent management plan to the CoCP applicable to the operational phase of the Project.
Landscape			
ID 3.1.1 (Para 6.5.36)	Lincolnshire Wolds National Landscape (AONB) - direct effects	<p>The Scoping Report proposes to exclude consideration of direct effects on the landscape of the Lincolnshire Wolds National Landscape (AONB) (with the exception of any effects arising from temporary access routes) as no above ground infrastructure would fall within the designated area. The Inspectorate agrees that significant direct effects are likely and that this matter can be scoped out of the ES on the basis that the ES assesses potential direct impacts from the temporary access routes.</p> <p>PINS has subsequently confirmed that the correction of this comment to the following: The Inspectorate acknowledges a typographical error in ID 3.1.1 of the Grimsby to Walpole Scoping Opinion adopted on 10 September 2024. The Scoping Opinion states that "[t]he Inspectorate agrees that significant direct effects are likely and that this matter can be scoped out of the ES..." (emphasis added). The Inspectorate clarifies that this should state "[t]he Inspectorate agrees that significant direct effects are unlikely and that this matter can be scoped out of the ES..."</p>	<p>With the exception of any effects arising from temporary access routes, direct effects upon the Lincolnshire Wolds National Landscape (AONB) are unlikely and are therefore scoped out of the PEI Report and ES.</p> <p>The preliminary assessment of the effects of the Project upon the Lincolnshire Wolds National Landscape (AONB) was reported in June 2025 PEI Report Volume 2 Part C Chapter 2 Landscape (Ref 1).</p>
ID 3.1.2 (Para 6.5.39 and Tables 6.2 and 6.3)	Proposed Lincolnshire Wolds National Landscape (AONB) extension	On the basis that the proposed extension has no formal status and lies outside the Scoping Boundary, the Inspectorate agrees this matter can be scoped out of the assessment. However, the Inspectorate welcomes that this will be kept under review should the situation change.	This matter has been scoped out of the assessment but will be kept under review.
ID 3.1.3 (Para 6.5.40 and Tables 6.2and 6.3)	North Norfolk National Landscape (AONB)	The Inspectorate agrees that significant effects on the North Norfolk National Landscape (AONB) are unlikely given the distance from the Scoping Boundary (14 km) and that this matter can be scoped out of the assessment for all phases of the Proposed Development.	No further action required, this matter has been scoped out of the assessment.
ID 3.1.4 (Para 6.5.41 and Table 6.3)	Areas of Great Landscape Value (AGLV) - direct effects	The Inspectorate agrees that direct effects on AGLVs can be scoped out of the assessment for all phases of the Proposed Development on the basis that none are located within the Scoping Boundary. For clarity, the Inspectorate agrees with the proposal to assess indirect effects.	A preliminary assessment of the indirect effects of the Project on the AGLV is presented in June 2025 PEI Report Volume 2 Part B Sections 1-4 and 5-6 Chapter 2 Landscape (Ref 1). The assessment of the indirect effects of the Project on the AGLV will be presented in the ES. No further action required in respect of direct effects as these have been scoped out.
ID 3.1.5 (Para 6.5.52 and Tables 6.2 and 6.3)	North East Lincolnshire Landscape Character Types (LCT) 1: Industrial Landscape (Humber Estuary LCA)	The Inspectorate agrees that given the nature of LCT 1 (Industrial Landscapes), significant effects are unlikely and that this matter can be scoped out of the assessment for all phases of the Proposed Development.	No further action required, this matter has been scoped out of the assessment.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
ID 3.1.6 (Tables 6.2 and 6.4)	North East Lincolnshire LCT 5: Sloping farmland and LCT 6: High farmland (construction)	Paragraph 6.5.51, 6.5.55 and identify the potential for indirect effects to LCT 5, LCT 6, RLCT 7B and LCA D2. Tables 6.2 and 6.3 scope in operational phase effects on these receptors, but scope out construction phase effects. Paragraph 6.9.5 states that “tall construction plant (for example tower cranes and piling rigs) rarely gives rise to significant landscape effects as it is present at each pylon location for a short period of time.” However, the Scoping Report does propose to assess construction phase effects for other LCTs, RLCTs and LCAs. In the absence of a justification for scoping out construction phase effects on these particular receptors, the Inspectorate does not agree this matter can be scoped out. The potential for indirect effects during the construction phase should be assessed within the ES, where significant effects are likely.	A preliminary assessment of effects on the North East Lincolnshire LCT’s, East Midlands RLCT’s and Kings Lynn and West Norfolk LCA’s within the 5 km Study Area is presented in the June 2025 PEI Report Volume 2 Part B Section 2 Chapter 2 Landscape (LCT 5 and LCT6), New Lincolnshire Connection Substation B to New Weston Marsh Substations A and B (Section 4) (RLCT 7b) and New Walpole B Substation (Section 7) (LCA D2). This includes a preliminary assessment, for both the construction and operational phases of the Project, as reported within section 2.7 of each chapter. This assessment will be updated as appropriate and reported within the ES.
ID 3.1.7 (Tables 6.2 and 6.3)	East Midlands Regional Landscape Character Types (RLCT) 7b:Wolds scarps, Ridges and Valleys (construction)		
ID 3.1.8 (Tables 6.2 and 6.3)	Kings Lynn and West Norfolk LCA D2: Walpole, Terrington and Clench Warton (construction)		
ID 3.1.9 (Para 6.5.56 and Tables 6.2 and 6.3)	East Midlands RLCTs 1A, 1B, 1C, 1E and 4B	The RCLT's are as follows: RLCT 1A: Coastal Saltmarshes and Mudflats/RCLT 1B Coastal Dunes, Beach and Intertidal Sand Flats/RLCT 1C Shallow Coastal Waters, RLCT 1E: Offshore industries, Fisheries and Navigations; and RLCT 4B: Wooded vales;. The inspectorate agrees that, given the nature of RLCTs 1A, 1B, 1C and 1E significant effects are unlikely during all phases of the Proposed Development and that these receptors can be scoped out of the assessment. The Inspectorate also agrees that given the very minimal overlap of RLCT 4B and the Study Area, significant effects are unlikely to occur and that this matter can be scoped out.	No further action required, this matter has been scoped out of the assessment.
ID 3.1.10 (Para 6.5.51 and Tables 6.2 and 6.3)	Kings Lynn and West Norfolk Landscape Character Assessment (LCA) E4: Marshland St. Jame	The Inspectorate agrees that significant effects on the LCA are unlikely given the distance from the Scoping Boundary and that this matter can be scoped out of the assessment for all phases of the Proposed Development.	No further action required, this matter has been scoped out of the assessment.
ID 3.1.11 (Tables 6.2 and 6.3)	Maintenance phase effects on all receptors	In relation to the applicant wanting to scope out the maintenance phase effects on all receptors, the Inspectorate agrees that significant effects are unlikely during the maintenance phase and that this matter can be scoped out of the assessment for all impacts and receptors.	No further action required, this matter has been scoped out of the assessment.
ID 3.1.12 (Tables 6.2 and 6.3)	Localised widening of public highways - operational phase	In relation to the applicant wanting to scope out the localised widening of public highways - operational phase, on the basis that roadside vegetation lost during widening works would be reinstated like for like, the Inspectorate agrees that significant effects are unlikely. This matter can therefore be scoped out of the ES, however the Inspectorate expects to see a clear commitment secured for all proposed reinstatement.	No further action required, this matter has been scoped out of the assessment. Proposals for the proposed reinstatement of any vegetation removed will be provided in the ES and secured through the design and DCO requirements.
ID 3.1.13 (Section 6.4)	Study Area	The Scoping Report states that an initial field survey determined that existing pylons at distances between 1 km and 3 km are typically noticeable but not prominent. It therefore concludes that significant effects are most likely to occur to receptors within 3 km. No evidence has been provided to support this statement and it is not known if the height of the existing pylons referred to reflects that of the proposed pylons. The Study Area should take into account theoretical visibility identified in the proposed Zone of Theoretical Visibility (ZTV) maps to identify any locations outside	Experience from previous National Grid projects where significant effects have been identified provides evidence that effects over 3 km tend not to be significant. Existing 400 kV pylons to the south of the Study Area are of an equivalent height to the proposed overhead line and therefore considered to be comparative to the Project. However, there are exceptions to this and therefore the Study Area for the Project is 5 km to ensure any exceptions for this Project are fully captured. Beyond this distance, the visibility of

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		of the 3 km Study Area which could potentially experience significant effects.	pylons diminishes significantly under most conditions. For example, at 5 km, the apparent height of a pylon reduces to 0.61 cm. At 10 km, it is further reduced to just 0.31 cm, making them barely perceptible except in optimal viewing conditions. National Grid therefore considers that a 5 km Study Area is proportionate and sufficient to identify any significant visual effects. However, the Study Area will continue to be reviewed as the Project develops. ZTVs have been provided at the PEI stage, see Supplementary PEI Report Volume 2 Part B Figure 3.2 Zone of Theoretical Visibility (ZTV) and the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Figure 3.2 Zone of Theoretical Visibility (ZTV) (Ref 1). All of these ZTVs will be updated at the ES stage to account for the final design.
ID 3.1.14 (Para 6.4.7)	ZTV	Paragraph 6.4.7 states that ZTV maps would be produced for pylon routes. ZTV analysis should also be undertaken for the maximum foreseeable parameters of development within substation compounds. The parameters used to inform the ZTVs should be provided.	A ZTV will be undertaken for both pylons and substations. ZTVs have been provided at PEI stage for the Project, as shown in Supplementary PEI Report Volume 2 Part B Figure 3.2 Zone of Theoretical Visibility (ZTV) and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Figure 3.2 Zone of Theoretical Visibility (ZTV) (Ref 1). All of these ZTVs will be updated for the ES to represent the final design. For pylons, the heights of pylons has been taken from the pylon schedules for the proposed design as it currently stands. For substations, the top gantry heights has been used, this being the tallest structure within the substation compounds. The parameters used to inform the ZTVs for the ES will be provided.
ID 3.1.15 (Para 6.6.6)	Landscape and Ecological Management Plan (LEMP)	The Outline CoCP contains a commitment to produce a LEMP prior to construction, which would detail landscape planting and habitat creation. Should such planting be relied upon to mitigate effects, an outline LEMP should be provided with the application.	An outline LEMP will be produced at the ES stage and will be submitted with the DCO application.
ID 3.1.16 (Section 6.7)	Part decommissioning of the existing Grimsby West Substation	Part decommissioning of the existing Grimsby West Substation is identified as a potential source of construction impact in paragraph 6.7.3, however there is no further mention of this activity in Table 6.2. For the avoidance of doubt, the potential for impacts to arise from this activity should be assessed, where significant effects are likely to occur.	The decommissioning of the existing Grimsby West Substation is not yet assessed in the PEI Report but will be fully assessed in the ES.
ID 3.1.17 (Para and A.4.13 of Appendix 7A)	Sequential effects	Sequential effects are briefly mentioned in a broad context in Appendix 7A of the Scoping Report (LVIA Methodology), but there is no specific reference to any assessment methodology for this matter. Given the scale and repetitive nature of the Proposed Development, combined with varying visibility of pylons, this is likely to be an important matter for users of Public Rights of Way (PRoW) networks and should be addressed in the ES.	<p>A preliminary assessment of the effects of the Project on PRoWs, National Trails and promoted recreational routes is presented in Supplementary PEI Report Volume 2 Part B Chapter 3 Visual for Section 5. For all other sections of the Project, this preliminary assessment was included within the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 3 Visual (Ref 1). This includes references to sequential views where the Project crosses a route multiple times and considers the effects of the Project as a whole on these receptors. The methodology is described in further detail within Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope.</p> <p>An assessment of sequential effects upon National Trails and regionally promoted routes within the 5 km Study Area will be provided in the ES.</p>

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
Visual			
ID 3.2.1 (Tables 7.2 and .3)	Receptors further than 10 km from the Scoping Boundary and outside the ZTV - construction and operation	The inspectorate considers that the Study Area and ZTV should represent the extent the likely impacts from all phases of the Proposed Development, The Inspectorate considers that a blanket 10 km rule is premature at this stage until the ZTV has confirmed the potential visibility. The Applicant should make effort to agree the methodology for the ZTV with relevant consultation bodies including local authorities. The Inspectorate agrees that any impacts on visual receptors located outside of the ZTV, once ground-truthed by field work, are unlikely to result in significant effects and can be scoped out of the ES.	<p>ZTVs show areas of potential visibility but do not assess the magnitude of visual impact or the sensitivity of receptors. As noted in National Grid’s response to ID 3.1.13, at 10 km, a 50 m high pylon would appear to be approximately 0.31 cm high, making them barely perceptible except in optimal viewing conditions. Even when viewed by a highly sensitive visual receptor, it is extremely unlikely that the magnitude of change in the view would give rise to significant visual effects at this distance of 10 km. A series of representative viewpoints has been prepared, informing the preliminary assessment of effects on parishes within Section 5 as presented in Supplementary PEI Report Volume 2 Part B Chapter 3 Visual. For all other sections of the Project, viewpoints were included in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 3 Visual (Ref 1). Agreement on the location of these viewpoints and the methodology proposed for defining the ZTV and assessing visual effects, will be sought from the relevant consultation bodies before the full visual assessment is undertaken and presented in the ES.</p> <p>In respect of the construction phase, the tallest equipment is anticipated to be the mobile cranes for pylon erection. The crane would be used to lift all sections of each pylon into place. However, the cranes would be extended for several hours only and would be retracted when not in use. Cranes would be moved consecutively along the route, so any effects would be short-term and transient.</p> <p>As with other projects of this type, National Grid does not propose preparing a ZTV for the Project's construction phase. This is because the information on crane height will not be known until post-consent after a contractor has been appointed. Also, the cranes would only be present briefly at each pylon site, substantially moderating any effects on the landscape. The ZTV production assumes that the greatest effects on the landscape would arise from the presence of tall pylons in the landscape during the operational phase.</p>
ID 3.2.2 (Tables 7.2 and 7.3)	People living and moving around communities and engaging in recreational activities including people using local roads, PRoW and waterways (beyond 3 km of the Project) - construction, operation and maintenance.	The Inspectorate has provided comment on the proposed 3 km Study Area at ID 3.1.13. On the basis that the ZTV does not identify receptors outside of the 3 km that could be significantly affected, the Inspectorate agrees this matter can be scoped out of the ES.	A series of representative viewpoint locations has been selected, some of which are intended to inform the preliminary assessment of effects on people living and moving around and engaging in recreational activities. This includes people using local roads, public rights of way and waterways within the 5 km Study Area. There is ongoing consultation with relevant authorities regarding these viewpoints, and agreement of viewpoint locations will be sought in advance of the full visual assessment, which will be undertaken at ES Stage. The potential for adverse effects on highly sensitive receptors beyond 3 km will be kept under review, although we consider that any such effects are highly unlikely to be significant even if theoretically visible, as explained in response to ID 3.2.1.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
ID 3.2.3 (Tables 7.2 and 7.3)	People using National Trails and regionally promoted routes (beyond 3 km) (construction, operation and maintenance)	In relation to the applicant wanting to scope out people using National Trails and regionally promoted routes, the Inspectorate has provided comment on the proposed 3 km Study Area at ID 3.1.13. On the basis that the ZTV does not identify receptors outside of the 3 km that could be significantly affected, the Inspectorate agrees this matter can be scoped out of the ES.	A series of representative viewpoint locations has been selected, some of which are intended to inform the preliminary assessment of effects on people using National Trails and regionally promoted routes within the 5 km Study Area. Agreement on the location of these viewpoints will be sought from the relevant consultation bodies before the full visual assessment is undertaken. The potential for adverse effects on highly sensitive receptors beyond 3 km will be kept under review, although we consider that any such effects are highly unlikely to be significant even if theoretically visible, as explained in response to ID 3.2.1.
ID 3.2.4 (Tables 7.2 and 7.4)	Occupants of individual selected properties within 400m (construction and maintenance)	In relation to the applicant wanting to scope out occupants of individual selected properties within 400m, Table 7.2 proposes to scope in construction phase effects on occupants of individual properties, however this matter is proposed to be scoped out in Table 7.3. For the avoidance of doubt, the Inspectorate considers this matter should be scoped in where there is the potential for Residential Visual Amenity Effects.	<p>A Residential Visual Amenity Assessment (RVAA) of the Project during its operational phase will be undertaken at ES Stage and it will follow recognised guidance issued by the Landscape Institute (TGN 02/19).</p> <p>Although it is highly unlikely that construction or maintenance activities associated with an overhead line could be considered ‘overbearing’ and exceed the Residential Visual Amenity Threshold defined in TGN 02/19, a RVAA will be undertaken for any properties identified during the ES stage where this type of effect may occur.</p>
ID 3.2.5 (Table 3.2.5 and Appendix 7A)	Occupants of individual selected properties within 150m (construction and maintenance)	In relation to the applicant wanting to scope out occupants of individual properties beyond 150m, the Inspectorate notes that the 150m Study Area proposed accords with the Landscape Institute (LI) published the Residential Visual Amenity Assessment (RVAA) guidance methodology. The Inspectorate agrees that this matter can be scoped out of the ES.	No further action required, this has been scoped out of the assessment.
ID 3.2.6 (Tables 7.2 and 7.3)	Main road and rail users (unless recognised as a scenic or tourist route) (construction, operation and maintenance)	In relation to the applicant wanting to scope out the main road and rail users, the Inspectorate agrees that any visual impacts on main road and rail users are not anticipated to experience significant effects because of the glimpsed nature of the views. This matter can be scoped out of the ES.	No further action required, this has been scoped out of the assessment.
ID 3.2.7 (Tables 7.2 and &.3)	Localised widening of public highways (operation and maintenance)	In relation to the applicant wanting to scope out localised widening of the public highway, on the basis that roadside vegetation lost during widening works would be reinstated like for like, the Inspectorate agrees that significant effects are unlikely. This matter can be scoped out of the ES. The Inspectorate expects to see a clear commitment secured for all proposed reinstatement.	No further action required, this has been scoped out of the assessment. Engagement with Local Highway Authorities is ongoing to identify suitable access routes and appropriate mitigation. This will be set out within the Transport Assessment (TA), ES and secured in the environmental control plans.
ID 3.2.8 (Tables 7.2 and &.3)	Periodic vehicle/helicopter/drone access for routine maintenance and emergency repairs (maintenance) (all receptors)	In relation to the applicant wanting to scope out periodic vehicle/helicopter and drone access for routine maintenance repairs, the Inspectorate agrees that significant effects are unlikely during the maintenance phase and that this matter can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.2.9 (Tables 7.2 and &.3)	General maintenance activities including cutting back of vegetation along wayleave corridor to ensure safety clearances (all receptors)	In relation to the applicant wanting to scope out the general maintenance activities including cutting back of vegetation along wayleave corridor to ensure safety clearances, the Inspectorate agrees that significant effects are unlikely during the maintenance phase and that this matter can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
ID 3.2.10 (Para 7.8.7)	Residential amenity	A 400m Study Area is proposed for the RVAA. The Applicant should also consider the potential for impacts on properties beyond this distance should they have potentially clear, open and direct views of the scheme, particularly of larger elements such as the sub-stations.	<p>A RVAA of the Project during its operational phase will be undertaken at ES Stage and it will follow recognised guidance issued by the Landscape Institute (TGN 02/19).</p> <p>A RVAA is primarily concerned with whether effects of a development would be overbearing, not that it would just be visible, and gives guidance on the Study Areas for varying development types to ensure RVAA are proportional. For overhead lines, TGN 02/19 suggests a distance of 100-150m of a finalised route should be considered for inclusion in a RVAA. Therefore, it is considered that the proposed Study Area of 400m is appropriate and exceeds the guidance from the Landscape Institute.</p> <p>Receptors beyond this 400 m Study Area will be considered on a case by case basis based upon a proportionate approach, where there may be a material risk of overbearing effects as defined by the Landscape Institute guidance.</p>
ID 3.2.11 (N/A)	Overlap with landscape assessment	The Inspectorate's comments on the proposed landscape assessment at ID's 3.1.13 to 3.1.17 of this Scoping Opinion apply equally to the proposed visual assessment. The Inspectorate has identified a high degree of duplication between the Visual and Landscape chapters and appendices of the Scoping Report. Given the inherent overlap between the visual assessment and the landscape assessment, the Inspectorate recommends that consideration be given as to how repetition between these ES chapters can be kept to a minimum.	It is noted that ID's 3.1.13 to 3.1.17 also apply to visual, and the responses to those comments reference both landscape and visual issues. While there will inevitably some overlap in the landscape and visual information, for clarity of information, the preliminary landscape and visual assessments are provided separately in Chapters 2 and 3 of the Supplementary PEI Report and June 2025 PEI Report. Reduction in repetition will be considered at ES stage where possible.
3.2.12 (N/A)	Impact on canals and waterways	Consideration should be given to the potential for likely significant effects from the visual impact of cable crossings of the canal network, including at the crossing location on the River Witham and where the landscape does not provide for easy visual mitigation of the works. This should include the impacts of lighting near to the canal and waterway, including the potential for distracting boaters at dusk. The ES should identify any specific mitigation which may be required.	<p>Canal crossings have been included as representative viewpoints. For all other sections of the Project, viewpoints relevant to canal crossings are identified in the June 2025 PEI Report Volume 3 Part B Sections 1-4 and 6-7 Appendix 3A Proposed Viewpoints (Ref 1). General information is provided in these preliminary assessments and the full assessment of the construction and operational effects of the Project on people using the waterways and associated public rights of way (inclusive of lighting) will be presented in the Visual chapter of the ES.</p> <p>During construction, some lighting may be used at dusk, however it will be of the lowest luminosity necessary to safely perform each task and will be designed, positioned, and directed to avoid any potential for impacts on boaters at dusk. Control of lighting during construction will be secured in the Construction Environmental Management Plan (CEMP).</p> <p>No lighting is proposed near canals during operation, the only lighting being located at substation locations.</p>
Ecology and Biodiversity			
ID 3.3.1 (Para 8.5.47)	Hazel dormouse surveys	In relation to the applicant proposing to scope out the Hazel dormouse surveys, the Inspectorate agrees that hazel dormouse can be scoped out of the assessment on the basis that there are no records of the receptor within the Study Area and as the scoping boundary lies beyond the species' known distribution.	The Applicant acknowledges the Inspectorate's view that hazel dormouse surveys can be scoped out of the assessment on the basis that there are no records of the receptor within the Study Area and that the scoping boundary lies beyond the species' known distribution. Therefore, effects on hazel dormouse have not been considered further within the PEI Report and the ES. It is

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			noted that should these species be identified during further site surveys, the potential for significant effects will be reconsidered.
ID 3.3.2 (Para 8.5.50)	High brown fritillary (Fabriciana adippe), pearl-bordered fritillary (Boloria euphrosyne) and marsh fritillary (Euphydryas aurinia)	In relation to the applicant proposing to scope out the High brown fritillary, (Fabriciana adippe), pearl-bordered, fritillary (Boloria euphrosyne) and marsh fritillary (Euphydryas aurinia), the record of these species being present within the Scoping Boundary are over 80 years old, the Inspectorate agrees High brown fritillary, pearl-bordered fritillary and marsh fritillary can be scoped out of the ES. However, should these species be identified during further site surveys, the potential for significant effects should be reconsidered.	National Grid acknowledges the Inspectorate's view that high brown fritillary, pearl-bordered fritillary and marsh fritillary can be scoped out of the ES. Therefore, high brown fritillary, pearl-bordered fritillary and marsh fritillary have not been considered further in the June PEI Report or the Supplementary PEI Report, and are scoped out of the ES. It is noted that should these species be identified during further site surveys, the potential for significant effects will be reconsidered.
ID 3.3.3 (Tables 8.4 and 8.7)	Statutory and non-statutory designated sites (without mobile qualifying criteria) located greater than 2 km from the Scoping Boundary	In relation to the applicant wanting to scope out the Statutory and non-statutory designated sites (without mobile qualifying criteria) located greater than 2 km from the Scoping Boundary, the Inspectorate agrees that the distance separating these sites from the Proposed Development would result in significant effects being unlikely. As such, this matter can be scoped out of the ES.	National Grid acknowledges the Inspectorate's view that those statutory and non-statutory designated sites (without mobile qualifying criteria) located greater than 2 km from the Scoping Boundary can be scoped out of the ES, therefore these sites have not been considered further within the June 2025 PEI Report or the Supplementary PEI Report, and are scoped out of the ES.
ID 3.3.4 (Table 8.4)	Invertebrates – incidental (direct) mortality for all phases	In relation to the applicant wanting to scope out invertebrates (incidental(direct) mortality for all phases), the Applicant proposes to scope out this matter for all phases on the basis that it is unlikely that notable population assemblages will be significantly affected by direct mortality once mitigation measures are in place. The Inspectorate is content that this matter can be scoped out, subject to appropriate mitigation measures agreed with the relevant stakeholders, secured and embedded within control documents.	National Grid will assess the suitability of habitats within the draft Order Limits to support protected or notable invertebrate assemblages. Mitigation will be applied where a potential significant effect on the invertebrate assemblage is predicted due to impacts upon suitable habitats. National Grid will seek to agree appropriate mitigation measures (if and where required) with the relevant stakeholders, and these will be secured and embedded within control documents.
ID 3.3.5 (Table 8.4)	Designated sites and notable habitats within 200m of roads that may be affected by the project –changes in air quality during maintenance	In relation to the applicant wanting to scope out the designated sites and notable habitats within 200m of roads that may be affected by the project, the Inspectorate states: Due to the low predicted number of vehicle movements during maintenance, the Inspectorate agrees that vehicle emissions during operation are unlikely to result in significant effects on biodiversity receptors; therefore this matter can be scoped out of the ES.	National Grid acknowledges the Inspectorate's view that due to the low predicted number of vehicle movements during maintenance, vehicle emissions during operation are unlikely to result in significant effects on biodiversity receptors and as such those designated sites and notable habitats within 200m of roads can be scoped out of the June 2025 PEI Report, the Supplementary PEI Report and the ES.
ID 3.3.6 (Table 8.4)	Designated sites and notable habitats within 200m of roads that may be affected by the project – changes in water quality and dust during maintenance	Due to the low predicted number of vehicle movements during maintenance, the Inspectorate agrees that vehicle emissions during operation are unlikely to result in significant effects on biodiversity receptors; therefore the designated sites and notable habitats within 200m of roads that may be affected by the project, can be scoped out of the ES.	National Grid acknowledges the Inspectorate's view that due to the low predicted number of vehicle movements during maintenance, the vehicle emissions during operation are unlikely to result in significant effects on biodiversity receptors and as such the designated sites and notable habitats within 200m of roads that may be affected by the project, can be scoped out of the June 2025 PEI Report, the Supplementary PEI Report and the ES.
ID 3.3.7 (Table 8.4)	Designated sites and notable habitats –pollution impacts during maintenance	In relation to the applicant wanting to scope out the designated sites and notable habitats, the Inspectorate agrees that given the nature of the development during maintenance, significant effects on biodiversity receptors during maintenance are unlikely and therefore agrees this matter can be scoped out of the ES.	National Grid acknowledges the Inspectorate's view that given the nature of the development during maintenance, significant effects on biodiversity receptors including designated sites and notable habitats are unlikely, and therefore this matter can be scoped out of June 2025 PEI Report, the Supplementary PEI Report and the ES.
ID 3.3.8 (Table 8.4)	Habitat gains for nesting birds	In relation to the applicant wanting to scope out habitat gains for nesting birds, the Inspectorate agrees that whilst pylons could provide additional nesting habitat for some species, any effects	National Grid acknowledges the Inspectorate's view that whilst pylons could provide additional nesting habitat for some species, any effects would be localised and unlikely to be significant and

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		would be localised and unlikely to be significant. The Inspectorate agrees this matter can be scoped out of the ES.	that habitat gains for nesting birds can be scoped out of the June 2025 PEI Report, the Supplementary PEI Report and the ES.
ID 3.3.9 (Table 8.7)	Impacts to common and widespread habitats of low sensitivity and/or conservation interest	In relation to the applicant wanting to scope out the impacts to common and widespread habitats of low sensitivity and/or conservation interest, the Inspectorate agrees that impacts on common and widespread habitats of low sensitivity and/or conservation interest can be scoped out of the ES.	National Grid acknowledges the Inspectorate's view that the impacts to common and widespread habitats can be scoped out of the June 2025 PEI Report, the Supplementary PEI Report and the ES. As described within Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope , these habitats are assigned a sensitivity/value of negligible.
ID 3.3.10 (Para 4.8.42)	Underground cables	The Scoping Report identifies the potential for HDD under watercourses. Should HDD form part of the Proposed Development, the ES should assess any likely associated significant effects on ecological receptors including the impact of noise and magnetic fields on fish.	At this stage of the design, as summarised within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description , it is anticipated that use of HDD will be limited to the early works required to underground existing lower voltage utilities to enable construction of the new overhead line and for the construction and installation of underground cables connecting the new Weston Marsh Substation A to the new Weston Marsh Substation B in Section 5. For the construction and installation of underground cabling in Section 5, identified through design development that has taken place since publication of the June 2025 PEI Report, an open cut trench methodology has been assumed as a worst-case for the purposes of Supplementary PEI Report, but HDD remains an option. The proposed construction and installation methods will be confirmed and assessed at ES stage, along with a description of any associated environmental management measures.
ID 3.3.11 (Table 8.1)	Great crested newts - District Level Licensing (DLL)	The Scoping Report states that the Applicant will engage with Natural England (NE) over the potential to use DLL. NE has advised the Applicant to pursue a traditional European Protect Species Mitigation-licensed approach as there is no active DLL scheme in Lincolnshire. The DLL approach includes strategic area assessment and the identification of risk zones and strategic opportunity area maps. The ES should include information to demonstrate whether the Proposed Development is located within a risk zone for GCN. If the Applicant enters into the DLL scheme, NE will undertake an impact assessment and inform the Applicant whether their scheme is within one of the amber risk zones and therefore whether the Proposed Development is likely to have a significant effect on GCN. The outcome of this assessment will be documented on an Impact Assessment and Conservation Payment Certificate (IACPC). The IACPC can be used to provide additional detail to inform the findings in the ES, including information on the Proposed Development's impact on GCN and the appropriate compensation required.	Further engagement between National Grid and NE has confirmed that there is no active DLL scheme in Lincolnshire and NE advises that National Grid pursue a traditional European Protect Species Mitigation (EPSM)-licensed approach. National Grid is completing presence/absence surveys for Great Crested Newts (GCN) to inform the impact assessment and will review the most appropriate mitigation options available for the Project at the time of submission.
ID 3.3.12 (Table 8.2)	Study Area	Table 8.2 identifies Study Areas for different ecological receptors using fixed radii. The Applicant should ensure that the Study Areas take into account the Proposed Development's Zone of Influence (ZOI); for example, a fixed radii may not be appropriate for sites supporting mobile/migratory bird species. The selection of sites should be informed by Natural England's Impact Risk Zones.	The Applicant has defined the Study Areas and Survey Areas for ecological receptors within the June PEI Report and the Supplementary PEI Report. The Study Areas for different ecological features are defined with reference to current industry guidance and professional judgement regarding the Project's Zone of Influence, within which effects could reasonably occur.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			<p>Natural England’s Impact Risk Zones have been considered when defining the Study and Survey areas for the Project.</p> <p>The Study Areas and Survey Areas defined within the June 2025 PEI Report and the Supplementary PEI Report will also be adopted for the purposes of the assessments reported within the ES.</p>
ID 3.1.13 (Para 8.5.46 and Table 8.4)	Collision mortality	The Scoping Report proposes a qualitative assessment of bird mortality from in-flight collisions. The assessment methodology should be clearly described within the ES. The Scoping Report proposes to assess collision mortality due to permanent structures/barriers on breeding and non-breeding birds. The ES should also assess impacts on bird populations associated with designated sites, where significant effects are likely.	<p>Effects upon bird mortality from in-flight collisions have not been assessed in detail within the Supplementary PEI Report or the June 2025 PEI Report.</p> <p>The assessment method to be adopted for the purposes of the ES will clearly describe the methodology for the qualitative assessment of bird mortality from in-flight collisions with permanent structures/barriers, and hence the assessment of impacts of any such mortality on breeding and non-breeding birds; and on bird populations associated with sites designated for their biodiversity value. The ES and the Report to inform Habitats Regulations Assessment (HRA) will assess potential impacts on bird populations associated with designated sites.</p>
ID 3.3.14 (Para 8.14)	Cross referencing	Paragraph 8.1.4 states that Chapter 15 Noise and Vibration includes details of the potential impacts of noise upon sensitive ecological features. Ecological receptors are not identified as a receptor for consideration within Chapter 15. Chapter 11 Geology and Hydrogeology states that effects on Groundwater Dependant Terrestrial Ecosystems (GWDTE) would be assessed within Chapter 8 Ecology and Biodiversity. GWDTEs are not identified as a receptor for consideration within Chapter 8 Ecology and Biodiversity.	The inconsistencies in the Scoping Report are noted. Potential noise and vibration impacts upon ecological receptors will be assessed within the Ecology and Biodiversity chapter. Similarly, effects on GWDTE will also be reported within the Ecology and Biodiversity chapter within the ES, noting that such effects have not yet been fully assessed within the Supplementary PEI Report or the June 2025 PEI Report.
ID 3.3.14 (Para 8.14)	Cross referencing	Whilst cross-reference across the ES is welcomed, the Applicant should ensure that assessments of likely significant effects are not accidentally omitted due to erroneous cross-referencing.	National Grid has ensured that assessments of likely significant effects are not accidentally omitted from the Supplementary PEI Report due to erroneous cross-referencing and will also do so in the ES, at which stage all required assessments will be complete in accordance with the PINS Scoping Opinion.
ID 3.3.15	Confidential annexes	Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	National Grid recognises its responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution or commercial exploitation resulting from publication of the information, will be provided in the ES as a confidential appendix. All other available assessment information has been included in the Supplementary PEI Report, and will be further supplemented in the ES chapters for Ecology and Biodiversity, as is standard practice. A placeholder explaining that a confidential appendix has been submitted to the Inspectorate will be included and may be made available subject to a request.

Historic Environment

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
ID 3.4.1 (Table 9.2)	Access to designated heritage assets - operation	In relation to the applicant wanting to scope out the access to designated heritage assets: Considering the number of heritage assets present within, and in proximity to, the Scoping Boundary and given the lack of detail regarding the confirmed siting of the operational infrastructure, the Inspectorate considers it premature to scope out this matter. The ES should assess impacts to heritage assets during operation from all permanent infrastructure, including pylons and substations, where significant effects are likely, or information demonstrating agreement with the relevant consultation bodies that there would not be a likely significant effect.	The assessment reported within the Supplementary PEI Report and the June 2025 PEI Report, does not assess impacts upon access to designated heritage assets. Further assessment of potential impacts upon access to heritage assets due to permanent infrastructure will be undertaken during development of the ES. Where associated effects are likely to be significant, these will be reported within the ES, or alternatively information will be provided demonstrating agreement with the relevant consultation bodies that there would not be any likely significant effects due to impacts upon access to designated heritage assets.
ID 3.4.2 (Table 9.2)	Physical impacts to, or changes to setting of heritage assets - vehicular traffic and maintenance activities	In relation to the applicant wanting to scope out the physical impacts to, or changes to setting of heritage assets: The Inspectorate agrees that physical impacts to, or changes to settings of heritage assets as a result of maintenance activities and traffic are not likely to result in significant effects and can be scoped out of the ES.	National Grid acknowledges the Inspectorate's view that physical impacts to, or changes to setting of heritage assets as a result of maintenance activities and traffic are not likely to result in significant effects. This matter has therefore been scoped out of the assessment reported within the June 2025 PEI Report, the Supplementary PEI Report and the ES.
ID 3.4.3 (Section 9.4)	Study Area	The Inspectorate does not consider that sufficient justification has been given to the 1 km Study Area for designated and non-designated heritage assets, given that the Landscape chapter identifies the potential for significant effects up to 3 km. See ID 3.1.13 of this Opinion for comments in this regard.	The methodology adopted for assessment reported in the June 2025 PEI Report, the Supplementary PEI Report and proposed for the ES assessment, defines a 3 km Study Area for all designated heritage assets. In addition, designated heritage assets of high value (scheduled monuments, grade I and II* listed buildings, and grade I and II* registered parks and gardens) within 5 km of the draft Order Limits will also be assessed. Designated heritage assets of high value located beyond the 5 km Study Area will also be assessed where there is potential for their setting to be impacted by the Project. The selection of designated heritage assets beyond the 5 km Study Area will be undertaken using professional judgement and guided by consultation with heritage stakeholders. A 1 km Study Area will be used to assess potential impacts to non-designated heritage assets. This Study Area will provide a contextual baseline of known heritage assets, inform on the likelihood of encountering previously unknown archaeological remains within the draft Order Limits and will consider likely impacts to the setting of non-designated heritage assets.
ID 3.4.3 (Section 9.4)	Geophysical surveys and trial trenching	The Study Area should be of sufficient extent to ensure that potential receptors which are located on elevated points in the landscape, are appropriately accounted for within the assessment. Similarly, assets located outside of the Study Area but with settings that extend into the Study Area should be included within the assessment, where significant effects are likely. The Applicant is advised to agree the Study Area with relevant consultation bodies.	National Grid acknowledges the Inspectorate's comment and will work to agree the Study Areas with Historic England and local authorities. The Study Area defined for the ES will provide sufficient geographic extent to consider elevated points in the landscape, including high value designated heritage assets located beyond 5 km where their setting may extend into the Study Area.
ID 3.4.4 (Para 9.8.10)		The Applicant should make efforts to agree all survey scope and effort with Historic England and the local authorities. This should include 'blank' areas and areas of known archaeological potential. Should any parts of the Study Area not be accessible for surveys,	National Grid acknowledges the Inspectorate's comment and will work to agree all survey scope, including 'blank' areas and areas of known archaeological potential with Historic England and local authorities. As an effort to achieve this National Grid has established a technical working group with stakeholders to discuss

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		the ES should detail (and assess) any necessary flexibility and mitigation required to accommodate any risk.	and agree such matters. The ES will define any limitations to the survey and identify suitable mitigation measures.
ID 3.4.5 (N/A)	Noise and vibration	The potential effects of noise and vibration on heritage assets have not been considered in the Scoping Report. The ES should assess the direct and indirect impacts of construction phase noise and vibration, where significant effects are likely.	Noise and vibration impacts on human receptors within the Section 5 Study Area, and vibration impacts on buildings and structures within the Section 5 Study Area, are considered within Supplementary PEI Report Volume 2 Part B Chapter 10 Noise and Vibration . For all other sections of the Project, the equivalent preliminary assessment was reported in the June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Chapter 10 Noise and Vibration (Ref 1). The potential effects of noise and vibration on heritage assets has been considered within the preliminary Historic Environment assessment within this Supplementary PEI Report. At ES Stage the assessments will be reviewed and updated to account for the final data provided in the noise and vibration assessments to inform the assessment of likely significant effects on heritage assets and their settings during construction.
ID 3.4.6 (N/A)	Indirect effects	Indirect effects are not considered in the Scoping Report. The ES should identify and assess any likely significant indirect effects on the historic environment, for example, changes in drainage patterns which could affect heritage assets.	Any likely significant indirect effects on the historic environment, e.g. changes in drainage patterns which could affect heritage assets will be assessed in the ES.
Water Environment and Flood Risk			
ID 3.5.1 (Table 10.6)	Flood conveyance from scaffolding structures on river banks – construction	On the basis that scaffolding installations would be temporary and managed through regulatory permitting processes, the Inspectorate agrees that effects on flood conveyance would be localised and unlikely to be significant. This matter can be scoped out of the ES. However, should the Applicant choose to disapply Flood Risk Activity Permits under the Environmental Permitting Regulations (or any other relevant consents) through the DCO, this potential impact should be assessed within the ES.	This matter has been scoped out of the assessment. National Grid acknowledges the Inspectorate's comment about disapplying Flood Risk Activity Permits (or any other relevant consents). Should this be the intended approach within the DCO application, then potential impacts associated with scaffolding structures on river will be assessed within the ES.
ID 3.5.2 (Table 10.6)	Increased surface water flood risk from impermeable surfaces associated with pylons - operation	The Inspectorate notes the advice from the Environment Agency and considers it premature to scope the increased surface water flood risk from impermeable surfaces associated with pylons out at this stage. The ES should assess any likely significant effects on flood risk and land drainage during operation (including impacts from flood debris during extreme flood events), or information demonstrating agreement with the relevant consultation bodies that there would not be a likely significant effect.	Engagement with relevant consultation bodies (including the Environment Agency) is ongoing regarding the effects of the Project upon flood risk and land drainage. The June PEI Report and the Supplementary PEI Report include a preliminary assessment of any likely significant effects on flood risk and land drainage during operation, including due to impermeable surfaces associated with pylons. This assessment will be reviewed and updated as appropriate during preparation of the ES.
ID 3.5.3 (Table 10.6)	Increased flood risk from loss of floodplain storage/ disruption to flow paths associated with pylons - operation	The Inspectorate notes the advice from the Environment Agency and considers it premature to scope the increased flood risk from loss of floodplain storage out at this stage. The ES should assess any likely significant effects on flood risk and land drainage during operation (including impacts from flood debris during extreme flood events), or information demonstrating agreement with the relevant consultation bodies that there would not be a likely significant effect.	Engagement with relevant consultation bodies (including the Environment Agency) is ongoing regarding the effects of the Project upon flood risk and land drainage. The June PEI Report and the Supplementary PEI Report include a preliminary assessment of any likely significant effects on flood risk due to loss of floodplain storage/disruption of flow paths due to pylons. This assessment will be reviewed and updated as appropriate during preparation of the ES.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
ID 3.5.4 (Table 10.6)	Increased pollution risk associated with pylons - operation	The Inspectorate agrees that there would be no significant sources of potential pollution associated with the overhead line infrastructure once construction is complete. This matter can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.5.5 (Para 10.7.15)	Maintenance Effects	The Inspectorate agrees that maintenance activities would pose a low risk of causing likely significant effects on water environment receptors. This matter can be scoped out of further assessment in the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.5.6 (Table 10.1)	Environment Agency assets	Table 10.1 states that potential impacts on Environment Agency assets due to construction vibration would be assessed. This is not included in Table 10.10: Proposed scope of assessment. For the avoidance of doubt, the Inspectorate expects this matter to be assessed, where significant effects are likely. The Environment Agency has highlighted that some assets may not have been recently surveyed, if at all. The Applicant is advised to liaise with the Environment Agency with regards to the baseline conditions of all relevant assets and undertake additional surveys should they be deemed necessary.	The June PEI Report and the Supplementary PEI Report do not include an assessment of the potential impacts of construction vibration upon Environment Agency assets. This assessment will be reported within the ES, informed by ongoing engagement with the Environment Agency. Should it be determined that significant effects due to vibration impacts are likely, the requirement for the completion of baseline surveys to inform the assessment will be considered.
ID 3.5.7 (Para 10.7.3)	Sources of impact	Decommissioning of relevant parts of the existing Grimsby West Substation should be considered as a source of potential impact during the construction phase.	The assessment of decommissioning of the existing Grimsby West Substation has not yet been completed and is therefore not reported within the PEI Report. The assessment reported within the ES will however consider the potential impacts and associated effects of decommissioning of this substation during the construction phase.
ID 3.5.8 (Para 10.7 and 10.8)	Watercourse sensitivity	The Environment Agency has highlighted concerns with the Applicant's approach to determining watercourse sensitivity and magnitude of impact. The Applicant is advised to revisit its approach and seek to agree the criterion with the Environment Agency.	Engagement with relevant consultation bodies (including the Environment Agency) is ongoing. The assessment approach applied for the purposes of the June PEI Report and the Supplementary PEI Report, and proposed for the ES assessments, has been set out in Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope . This includes refinement of the approach to defining the value of assessed receptors and how this may differ to their sensitivity to particular impacts (e.g. pollution). National Grid will seek agreement with the Environment Agency regarding the adopted approach for the assessment reported within the ES.
ID 3.5.9 (Table 10.9)	Significance matrix	The magnitude of change criterion included in Table 10.9: Significance matrix does not accord with those proposed in Table 10.8: Criteria for assigning impact magnitude. Furthermore, paragraph 10.8.13 states that 'Moderate' effects would be 'Significant', however Table 10.9 classes these as 'Potentially Significant'. The Applicant should ensure that the methodology for assessing significance is logical and consistent. Should the definition of 'Potentially Significant' be used, the ES should provide robust justification for the final conclusion made. See also ID 2.2.6 of this Opinion.	The assessment methodology adopted within the Water Environment and Flood Risk assessments reported within the June PEI Report and the Supplementary PEI Report, and proposed to be adopted for the purposes of the ES, is described within Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope . Residual effects which are moderate or above will be considered significant. A response to ID 2.2.6 is provided above.
ID 3.5.10 (N/A)	Ordinary watercourses	The Applicant should make efforts to identify flood risk for Ordinary Watercourses which do not have associated flood zones on the	The preliminary assessments reported within the June PEI Report and the Supplementary PEI Report do not include an assessment

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		Environment Agency's Flood Map for Planning and to include this information within the assessment of flood risk.	<p>of ordinary watercourses. The Environment Agency Long Terms Maps for Surface Water have been used as a proxy for the flood risk for Ordinary Watercourses as agreed with the Environment Agency.</p> <p>The use of the Risk of Flooding from Surface Water mapping (RoFSW) may be suitable for informing flood risk on ordinary watercourses where no detailed hydraulic modelling/Flood Zones exists. It was noted the RoFSW modelling does not consider the effects of climate change. Only present-day scenarios were considered as part of this modelling. Further checks will be undertaken at ES stage to inform flood risk for ordinary watercourses, to ensure the RoFSW is suitable/conservative with regards to informing fluvial flood risk and the effects of climate change. This was agreed with the Environment Agency in a meeting on 18 October 2024 and further detailed in email on 25 November 2024.</p>
ID 3.5.11 (N/A)	Water quality (construction)	The potential for effects on ground water quality from disturbance and mobilisation of existing contamination should be assessed in the ES, where significant effects are likely.	<p>An initial high level assessment of potential effects on ground water quality within the Section 5 Study Area from disturbance of existing contamination, is reported within Supplementary PEI Report Volume 2 Part B Chapter 7 Geology and Hydrology. For all other sections of the Project, the equivalent assessment was reported in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 7 Geology and Hydrology (Ref 1). Similarly, potential effects on surface water quality within Section 5 due to disturbance of existing contamination are considered within Supplementary PEI Report Volume 2 Part B Chapter 6 Water Environment and Flood Risk and the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 6 Water Environment and Flood Risk (Ref 1).</p> <p>The assessment will be updated as required and reported within the ES.</p>
ID 3.5.12 (N/A)	Agricultural drainage	The ES should include an assessment of any likely significant effects on retained existing agricultural drainage or the removal of this from the construction and operation of the Proposed Development.	<p>An initial assessment of the potential effects of the Project upon existing land drainage assets within the Section 5 Study Area is reported within Supplementary PEI Report Volume 2 Part B Chapter 6 Water Environment and Flood Risk. For all other sections of the Project, the equivalent assessment was reported in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 6 Water Environment and Flood Risk (Ref 1).</p> <p>The ES will report the outcomes of supplementary assessment of any likely significant effects due to impacts upon agricultural land drainage (including Internal Drainage Board watercourses) during the construction and operation of the Project.</p>
ID 3.5.13 (N/A)	Underground cables	The ES should assess any likely significant effects on the water environment, for example from the use of drilling fluid, should underground cables form part of the Proposed Development.	The potential likely significant effects on the water environment as a result of the proposed underground cables connecting the new Weston Marsh Substation A and new Weston Marsh Substation B will be assessed fully at ES stage.
Geology and Hydrogeology			
ID.3.6.1 (Table 11.3)	Geological conservation sites (construction)	Subject to confirmation of the absence of locally designated sites in the Study Area, the Inspectorate agrees that geological conservation sites can be scoped out of the ES.	Local plans have been reviewed as part of the June 2025 PEI Report and the Supplementary PEI Report assessment to confirm the absence of Local Geological Sites within the Study Area for

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			the Project. No such sites have been identified within either the June PEI Report or the Supplementary PEI Report assessments, therefore this has been scoped out of the assessment.
ID 3.6.2 (Table 11.3)	Disturbance of unstable ground from historical coal mining (construction)	The Inspectorate agrees that the disturbance of unstable ground from historical mining can be scoped out of the ES as the Study Area is not located within a recorded Coal Mining Reporting Area.	No further action required, this matter has been scoped out of the assessment.
ID 3.6.3 (Tables 11.3 and 11.8)	Effects on human health from residual soil contamination from construction activities (operation and maintenance).	Given the nature of the operational and maintenance phase, and that earthworks or materials movement (including any re-use of materials) during construction would be controlled under appropriate Environmental Permits, exemptions or CL:AIRE 'The definition of Waste: The development industry Code of Practice, the Inspectorate agrees significant effects are unlikely and that the effect on human health from residual soil contamination from construction activities can be scoped out of the ES. Whilst some ground disturbance may be necessary during maintenance, the Inspectorate assumes that this would be to land previously disturbed during construction. On the basis that earthworks or materials movement during operation is suitably controlled, the Inspectorate agrees this matter can be scoped out of the ES.	Suitable controls have been included in the Preliminary CoCP for the Project, provided within this Supplementary PEI Report, and this will be reviewed and updated at the ES stage. It is anticipated that the CoCP will be secured through DCO requirements.
ID 3.6.4 (Tables 11.3 and 11.8)	Deterioration in chemical quality of the land and aquifers through disturbance of ground that is affected by pre-existing contamination for maintenance purposes.	Given the nature of the operational and maintenance phase, and that earthworks or materials movement (including any re-use of materials) during construction would be controlled under appropriate Environmental Permits, exemptions or CL:AIRE 'The definition of Waste: The development industry Code of Practice, the Inspectorate agrees significant effects are unlikely and that the effect on human health from residual soil contamination from construction activities can be scoped out of the ES. Whilst some ground disturbance may be necessary during maintenance, the Inspectorate assumes that this would be to land previously disturbed during construction. On the basis that earthworks or materials movement during operation is suitably controlled, the Inspectorate agrees this matter can be scoped out of the ES.	This matter has been scoped out of the assessment. Suitable controls have been included in the Preliminary CoCP for the Project, provided within this Supplementary PEI Report, and this will be reviewed and updated at the ES stage. It is anticipated that the CoCP will be secured through DCO requirements.
ID 3.6.5 (Table 11.3)	Physical effects on aquifers, such as depletion of the aquifer and increased solids / turbidity from dewatering (operation)	The Inspectorate agrees that the physical effects on aquifers can be scoped out of the ES subject to no excavations and dewatering being required during operation.	No further action required, this matter has been scoped out of the assessment.
ID 3.6.6 (Table 11.3)	Structural damage to proposed structures from unstable or chemically aggressive ground conditions (operation)	The Inspectorate agrees the structural damage to proposed structures from unstable or chemically aggressive ground conditions can be scoped out of the ES on the basis that it will be considered as part of the standard engineering design process.	This has been scoped out of the Geology and Hydrogeology assessment and will be considered as part of standard engineering design process.
ID 3.6.7 (Table 11.3)	Mineral safeguarding	Although paragraph 11.7.4 states that mineral safeguarding is not scoped out, it further explains that it would be addressed through a stand-alone Minerals Sterilisation Report to be submitted as a separate document as part of the DCO application. Whilst this approach may be familiar to relevant consultees, the Applicant is reminded that all likely significant effects should be assessed within the ES. For the avoidance of doubt, any likely significant effects on mineral safeguarding should be assessed within the ES.	A Mineral Safeguarding Report (covering the same information as a Mineral Sterilisation Report) has been produced and is included as Supplementary PEI Report Volume 3 Part B Appendix 7B Minerals Safeguarding Report . This has not identified any likely significant effects to be assessed within the Supplementary PEI Report (with the justification provided within the standalone report). The findings of the preliminary Minerals Safeguarding

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			<p>Report will be discussed with local authorities through the ongoing consultation and engagement process.</p> <p>This conclusion will be reviewed and updated within the ES to ensure that any likely significant effects on mineral safeguarding are assessed and reported.</p>
ID 3.6.8 (Para 11.74)	Damage to structures from vibrations caused by piling	Although paragraph 11.7.4 states that the damage to structures from vibrations caused by piling is not scoped out, it further states that this is a matter of consideration for a structural engineer. The Inspectorate agrees that this matter is outside the scope of the geology and hydrogeology assessment, however any likely significant effects should be assessed as appropriate within the Noise and Vibration chapter.	These effects are relevant to the Noise and Vibration assessment and therefore have not been taken forward within the Geology and Hydrogeology chapter.
ID 3.6.9 (Table 11.2)	Private groundwater supplies	Table 11.2 states that the assessment will consider the effects of construction works on private groundwater abstractions. This is not explicitly included in Table 11.8: Proposed scope of assessment. For the avoidance of doubt, the Inspectorate expects this matter to be assessed, where significant effects are likely.	Effects on groundwater abstractions have been considered qualitatively within the June PEI Report and the Supplementary PEI Report, which include assessments to indicate any significant effects associated with the Project. Details of private water supplies were requested from the Local Authorities and, where provided, these have been included within the assessment within the June PEI Report and the Supplementary PEI Report. These will be assessed further and reported in the ES.
ID 3.6.10 (Paras 11.5.7, 11.5.23 and 11.5.42)	Historic landfills	The Scoping Report identifies a number of historic landfills in the Study Area but does not state whether there would be any impacts on these receptors. The ES should assess any likely significant effects that could arise from the Proposed Development, for example the mobilisation of contamination and the creation of pathways for contaminants.	The comment refers to historic landfills as receptors, which National Grid assumes should be a reference to historic landfills as sources. Where historic landfills are located within the Project Study Area, they have been taken forward for consideration as sources in line with any other potential contamination sites, in accordance with the methodology described in Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope . This approach will also be adopted for the assessment reported within the ES.
Agriculture and Soils			
ID 3.7.1 (Tables 12.3 and 12.10)	Impacts on agricultural land quality (operation and maintenance)	<p>Table 12.3 states that periodic vehicle access for routine maintenance and emergency repairs may require temporary access tracks and small compound areas but these are likely to be limited in extent. It states that all soil handling would be undertaken in line with published good practice. However, Table 12.7 states that temporary development can result in a permanent impact if the resulting disturbance of land use change causes permanent damage to soils. At present, the location and extent of temporary access tracks and compounds are not determined. On this basis, the Inspectorate does not agree that the impacts on agricultural land quality can be scoped out.</p> <p>In relation to the applicant proposing to scope out the impacts on agricultural land quality: The ES should assess any likely significant effects on agricultural land quality during the operation and maintenance phase based on the expected maximum extent of any routine maintenance activities.</p>	<p>The reference to permanent impacts from temporary developments comes from the Institute of Environmental Management and Assessment (IEMA) guidance and was included to recognise that if soils are poorly handled there can be long-term/permanent impacts.</p> <p>Works required during operation and maintenance activities are likely to be limited in terms of the land areas required. Any soil disturbance required would be undertaken following good practice guidance in place at that time, and as such it is not expected that significant impacts would occur: it is accepted that temporary developments can result in long-term impacts but an outline Soil Management Plan (SMP) will be submitted with the DCO application, setting out details of the good practice approach to soil handling during construction and operation/maintenance.</p> <p>This matter will also be addressed in the ES supported by further detail in relation to the likely scale and nature of maintenance and operation activities which could impact agricultural land and soils receptors and the commitments to minimise impacts as far as reasonably practicable.</p>

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
ID 3.7.2 (Tables 12.3 and 12.10)	Impacts on soil ecosystem services (operation and maintenance)	The Scoping Report notes that maintenance works would impact soils at a smaller scale than construction and that disturbance to soils during maintenance would be undertaken in accordance with good practice soil handling methods. However, Table 12.7 states that temporary development can result in a permanent impact if the resulting disturbance of land use change causes permanent damage to soils. At present, the location and extent of temporary access tracks and compounds are not determined. On this basis, the Inspectorate does not agree this matter can be scoped out. The ES should assess any likely significant effects on soil ecosystem services during the operation and maintenance phase based on the expected maximum extent of any routine maintenance activities	<p>The reference to permanent impacts from temporary developments comes from the IEMA guidance and was included to recognise that if soils are poorly handled there can be long-term/permanent impacts.</p> <p>Works required during operation and maintenance activities are likely to be limited in terms of the land areas required. Any soil disturbance required would be undertaken following good practice guidance in place at that time, and as such it is not expected that significant impacts would occur: it is accepted that temporary developments can result in long-term impacts but an outline SMP will be submitted with the DCO setting out details of the good practice approach to soil handling during construction and operation/maintenance.</p> <p>This matter will be addressed in the ES supported by further detail in relation to the likely scale and nature of maintenance and operation activities which could impact agricultural land and soils receptors and the commitments to minimise impacts as far as reasonably practicable.</p>
ID 3.7.3 (Tables 12.3 and 12.10)	Impacts on agricultural land holdings (operation and maintenance)	The Inspectorate acknowledges that temporary access tracks and small compound areas required for maintenance activities and emergency repairs are likely to be smaller in extent than during construction. However, Table 12.7 states that temporary development can result in a permanent impact if the resulting disturbance of land use change causes permanent damage to soils. At present, the location and extent of temporary access tracks and compounds are not determined. On this basis, the Inspectorate does not agree this matter can be scoped out. The ES should assess any likely significant effects on agricultural holdings during the operation and maintenance phase based on the expected maximum extent of any routine maintenance activities	<p>The reference to permanent impacts from temporary developments comes from the IEMA guidance and was included to recognise that if soils are poorly handled there can be long-term/permanent impacts.</p> <p>Works required during operation and maintenance activities are likely to be limited in terms of the land areas required. Any soil disturbance required would be undertaken following good practice guidance in place at that time, and as such it is not expected that significant impacts would occur; it is accepted that temporary developments can result in long-term impacts but an outline SMP will be submitted with the DCO setting out details of the good practice approach to soil handling during construction and operation/maintenance.</p> <p>This matter will be addressed in the ES supported by further detail in relation to the likely scale and nature of maintenance and operation activities which could impact agricultural land and soils receptors and the commitments to minimise impacts.</p>
ID 3.7.4 (Para 12.3.1)	Consultation	Whilst it is acknowledged the majority of the Proposed Development would be located within Lincolnshire County Council’s administrative area, the Applicant is advised to also consult with Cambridgeshire County Council and Norfolk County Council to inform the assessment.	National Grid has consulted with Cambridgeshire County Council and Norfolk County Council and will continue to do so as the design of the Project and the associated assessments are developed.
ID 3.7.5 (Section 12.5)	Agri Environment Schemes	Agri Environment Schemes and Woodland and Forestry Schemes are present within the Scoping Boundary. They have not been explicitly identified as a receptor in Table 12.3, nor are they further mentioned in the scope of assessment. Any likely significant effects on these schemes should be considered within the assessment of effects.	Agri Environment Schemes and Woodland and Forestry Schemes are receptors that will be assessed as part of the landholdings assessment and any significant effects will be set out in the ES. Those within the Section 5 Study Area have been included in the preliminary assessment as part of this Supplementary PEI Report. Similarly, for all other sections of the Project, such schemes were taken into account within the preliminary assessments reported within the June 2025 PEI Report.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			Cross reference will also be made to the assessment of associated impacts on ecology and biodiversity
ID 3.7.6 (N/A)	Best Most Versatile (BMV) land	The ES should contain a clear tabulation of the areas of land in each Best Most Versatile (BMV) classification to be temporarily or permanently lost as a result of the Proposed Development, with reference to accompanying map(s) depicting the grades. Specific justification for the use of the land by grade should be provided. Consideration should be given to the use of BMV land in the Applicant's discussion of alternatives.	<p>The extent of land comprising each Agricultural Land Classification (ALC) grade will be set out in a table in the ES, linked to mapping of the extent of each grade within the draft Order Limits. This will be based on detailed ALC surveys which will be undertaken through 2025. For the PEI Report, an initial assessment will be made based on available ALC mapping - this is termed the Provisional ALC mapping and does not distinguish between Grade 3a (best and most versatile (BMV) land and Grade 3b (non-BMV land); as such, a precautionary approach is being taken where all land mapped provisionally as Grades 1, 2 and 3 is considered to be potential BMV land.</p> <p>Potential impacts upon BMV land have been considered during design development and appraisal of alternatives, as described within the DDR and Supplementary PEI Report Volume 2 Part A Chapter 3 Main Alternatives Considered.</p>
Traffic and Movement			
ID 3.8.1 (Tables 13.2 and 13.7)	Impacts of abnormal loads on road users (construction)	The Scoping Report states that abnormal loads are planned for off-peak times and that routes would be agreed with the local highway authorities. However, there is no information to demonstrate that abnormal loads are capable of being transported in off-peak times and whether road closures or diversions would be required. The Inspectorate agrees with National Highways that the impact of abnormal loads on road users should be scoped in. The ES should therefore assess the likely significant effects of the transportation of abnormal loads during the construction phase.	<p>The effects of the transportation of Abnormal Indivisible Loads (AILs) are scoped into the assessment. Preliminary information regarding AILs required for the Project is provided within the June 2025 PEI Report Volume 2 Part B Chapter 9 Traffic and Movement (Ref 1) where available, within the Preliminary Assessment of Likely Significant Effects. Further information will be presented within the ES.</p> <p>The approach and routes for AILs will be discussed with National Highways and Local Highways Authorities during the preparation of the TA and ES.</p> <p>The ES will include assessment of the associated impacts and effects and where required, associated measures will be set out within the Construction Traffic Management Plan (CTMP) and CoCP. Notification of and approval for the transportation of abnormal loads will follow statutory process as defined by Road Vehicles (Construction and Use) Regulations.</p>
ID 3.8.2 (Tables 13.2 and 13.7)	Impacts of hazardous loads on general public (construction)	Table 13.2 states that there is low potential for significant effects on the general public as a result of a road traffic accident leading to a Hazardous Load spill. However, the Inspectorate notes the proposal in paragraph 13.8.38 to identify abnormal or hazardous loads during construction; to present a qualitative risk assessment; and to identify measures that will be employed to ensure the safe vehicular transport of components to and from the Project. The Inspectorate agrees with this proposed scope of assessment and therefore does not agree the impact of hazardous loads on general public can be scoped out.	<p>The impact of hazardous loads is scoped into the assessment. Where available, preliminary information regarding abnormal or hazardous loads required for the project is provided within June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 9 Traffic and Movement (Ref 1) where available, within the Preliminary Assessment of Likely Significant Effects.</p> <p>Further information will be presented within the TA and ES, including the qualitative risk assessment for hazardous loads. Appropriate measures will be set out within the CTMP and CoCP. The approach and routes for abnormal loads / hazardous loads will be discussed with National Highways and Local Highways Authorities.</p>
ID 3.8.3 (Tables 13.2 and 13.7)	Impacts of closure of railway line on railway users (construction)	The Scoping Report states that blockades/temporary closures to install protection/temporary works would occur overnight or during quiet periods to avoid/minimise impact; and that any vehicle crossings (if required) would be managed.	The assessment of impact to railway users is scoped into the assessment. Railway lines potentially impacted by the Project are identified within the June 2025 PEI Report and the Supplementary

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		Given the stage of the Proposed Development and the lack of information on where the Proposed Development may cross railway infrastructure, the Inspectorate considers that there is insufficient evidence at this stage to scope the impact of closure of railway line on railway users out of the assessment. The ES should include an assessment of the potential impacts to the railway network and operational rail safety, where there is potential for likely significant effects to occur. The Applicant should make effort to agree the approach to assessment with relevant consultation bodies including Network Rail.	PEI Report. Within the Section 5 Study Area, no railways are likely to be impacted by the Project. Further discussion will be undertaken with Network Rail and Local Highway Authorities in advance of the ES being finalised. More detailed assessment of impacts and effects upon railway users, including operational rail safety, and the measures adopted to minimise these will be set out within the CoCP and presented within the TA and ES.
ID 3.8.4 (Tables 13.2 and 13.7)	Impacts of closures of waters on waterway	The Scoping Report states that temporary culverts or temporary spanned bridges would be used for construction traffic to cross waterways. Given the stage of the Proposed Development and the lack of information on where the Proposed Development may cross waterways, and the requisite construction methods, the Inspectorate considers that there is insufficient evidence at this stage to scope this matter out. The ES should assess any likely significant effects on waterway users from the construction and use of temporary culverts or temporary spanned bridges across waterways.	Interfaces between navigable waterways and the Project are identified within the June 2025 PEI Report and the Supplementary PEI Report and a preliminary assessment of impacts is included. Where the proposed route of the Project and associated temporary or permanent access routes cross navigable waterways, the June 2025 PEI Report and the Supplementary PEI Report identify likely significant effects on waterway users. It is however noted that crossings of navigable waterways will be facilitated through the use of span bridges rather than culverts. Details will be discussed with relevant authorities and set out within the TA and ES.
ID 3.8.5 (Tables 13.2 and 13.7)	Impacts of increased operational and maintenance traffic volumes on : - road users; - public transport users (bus); and - pedestrians and cyclists.	The Scoping Report states that the number of operational and maintenance trips are anticipated to be low, however has not provided the anticipated movements at this stage. If the ES can demonstrate that the number of trips would not trigger the screening thresholds specified in the Institute of Environmental Management and Assessment (IEMA) Guidelines – Environmental Assessment of Traffic and Movement (2023), the Inspectorate agrees the matter can be scoped out of from further assessment. Should the number of movements exceed this threshold, the Inspectorate expects the ES to assess the likely significant effects of increased operational traffic on these receptors.	The June 2025 PEI Report and the Supplementary PEI Report include preliminary projections of operational/maintenance traffic for each Section of the Project. Current projections are 2 visits per month to substations and 1 per year for each pylon - therefore traffic flows will be below the IEMA guidance threshold for assessment and have negligible impact on operation of the highway network. Finalised projections of operational/maintenance traffic associated with the Project will be confirmed within the ES to provide a robust rationale as to why further assessment is scoped out.
ID 3.8.6 (Tables 13.2 and 13.7)	Impacts of vehicle crossing points on railway users (operation and maintenance)	The Scoping Report states that the number of crossings would be low. However, given the stage of the Proposed Development and the lack of information on the location or number of vehicle crossing points on railways, the Inspectorate does not agree the impact of vehicle crossing points on railway users can be scoped out. The ES should assess likely significant effects on railway users, or provide information demonstrating agreement with the relevant consultation bodies that there would not be a likely significant effect.	The assessment of impact to railway users is scoped into the assessment. Railway lines potentially impacted by the Project are reported in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 9 Traffic and Movement (Ref 1). It is noted that across the Project in its entirety, the proposed overhead line route crosses just 3 existing railway lines, as illustrated on the Supplementary PEI Report Volume 2 Part B Sections 1-7 Figure 9.1 Overall Context Map . Further discussion will be undertaken with Network Rail and Local Highway Authorities in advance of the ES being finalised. More detailed assessment of impacts and effects upon railway users and the measures adopted to minimise these will be set out within the CoCP and presented within the TA and ES.
ID 3.8.7 (N/A)	Access to recreational and tourism receptors	Impacts on access to recreational and tourism receptors should be assessed, where significant effects are likely.	The effects of the Project upon recreational and tourism receptors within the Section 5 Study Area are considered within the Socio-Economics, Recreation and Tourism chapters of the Supplementary PEI Report. For all other sections of the Project, the equivalent preliminary assessment was reported in the June

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 (Ref 1), Chapter 10 Socio-Economics, Recreation and Tourism. More detailed assessment of impacts, including access to recreation and tourism receptors, will be provided within the TA and ES submitted in support of the DCO application.
ID 3.8.8 (N/A)	Emergency services	The ES should consider the potential for significant effects on emergency services associated with any temporary road closures and/or temporary roadworks.	The Supplementary PEI Report provides an initial assessment of construction traffic impact on the local highway network within the Section 5 Study Area and identifies highway links where potential delays could have significant effects on emergency service vehicles. For all other sections of the Project, the equivalent preliminary assessment was reported in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7, Chapter 9 Traffic and Movement (Ref 1). At this stage, no temporary road closures or roadworks have been identified. Access routes and potential requirements for temporary closures will be discussed with the local highway authority and measures identified within the CoCP to limit impacts to all vehicles, particularly emergency service vehicles. More detailed assessment of closures/diversions and delay will be presented within the TA and ES.
Noise and Vibration			
ID 3.10.1 (Tables 15.2 and 15.11)	Vibration from construction traffic	The Scoping Report proposes to scope out an assessment of vibration from construction traffic on the basis that significant effects are not expected. The Inspectorate agrees that vibration from traffic during construction is unlikely to result in significant effects and is content that this matter can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.10.2 (Para 15.6.4 and 15.2 and 15.11)	Noise from overhead lines (operation)	The Scoping Report states that the overhead line system would be a ‘triple araucaria’ conductor bundle and that pylon fittings would be designed to National Grid Technical Specifications. The Inspectorate agrees that operational noise generated from overhead lines and pylons is unlikely to give rise to significant effects and is therefore content to scope the noise from overhead lines out on the basis that this conductor type is used. The Inspectorate welcomes that the Applicant would consider an assessment within the ES should alternative conductor types be employed.	The Applicant agrees with this approach. Should alternative conductor types be proposed an assessment within the ES will be considered.
ID 3.10.3 (Tables 15.2 and 15.11)	Noise from substation switchgear and auxiliary plant (operation)	Given the nature and anticipated frequency of noise from substation switchgear and auxiliary plant, the Inspectorate agrees that significant effects are unlikely and that the noise from substation switchgear and auxiliary plant can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.10.04 (Tables 15.2 and 15.11)	Vibration (operation)	On the basis that the substation plant would include vibration isolation measures within the design, the Inspectorate agrees that significant effects from operational vibration are unlikely. As such, this matter can be scoped out of the ES.	Based upon precedent experience of existing substations, National Grid considers the risk of significant effects due to vibration during operation to be negligible. This matter has therefore been scoped out of the assessment. The ES will include a description of the embedded design measures within the design of substations which contribute to avoiding or reducing the risk of adverse noise and vibration measures during operation.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
ID 3.10.05 (Tables 15.2 and 15.11)	Noise and vibration from maintenance activities	The Inspectorate agrees that noise and vibration from short term maintenance activities can be scoped out of the ES. However, the ES should consider the potential for more substantial activity to be required as part of maintenance, e.g. replacement of components of the Proposed Development, which would be more akin to the impacts described during the construction stage. The ES should include an assessment of any likely significant effects from such activities.	The assessment reported within the June 2025 PEI Report and the Supplementary PEI Report include consideration of potential impacts from more substantial maintenance activities. This will be further reviewed and assessed at the ES stage.
ID 3.10.06 (Table 15.2)	Vibration impacts on flood defences	Figure 10.2 shows that the Scoping Boundary overlaps with a number of existing flood defences. The ES should assess any likely significant effects of vibration on these structures from construction of the Proposed Development.	<p>Potential vibration effects on buildings and structures within the Section 5 Study Area during construction is considered in the Noise and Vibration assessment presented in the Supplementary PEI Report. For all other sections of the Project, an equivalent assessment was reported in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 10 Noise and Vibration (Ref 1).</p> <p>Potential vibration effects will be further reviewed and assessed at the ES stage.</p> <p>As previously stated, the June 2025 PEI Report and Supplementary PEI Report do not include an assessment of the potential impacts of construction vibration upon Environment Agency assets. This assessment will be reported within the ES, informed by ongoing engagement with the Environment Agency. Should it be determined that significant effects upon existing flood risk management assets due to vibration impacts are likely, the requirement for the completion of baseline surveys to inform the assessment will be considered.</p>
Socio-Economics, Recreation and Tourism			
ID 3.11.1 (Table 16.6 and 16.20)	Potential employment and training benefits across the supply chain - the local labour market (operation and maintenance)	The Inspectorate agrees that the potential employment and training benefits across the supply chain can be scoped out of the ES on the basis that operation and maintenance of the Proposed Development would generate a limited number of additional jobs and is therefore unlikely to give rise to any significant effects with respect to this matter.	No further action required, this matter has been scoped out of the assessment for operation and maintenance.
ID 3.11.2 (Tables 16.16 and 16.20)	Potential disruption to local users of promoted recreational routes and PRoW of significance in the local area (operation and maintenance)	The Scoping Report states that significant effects on promoted recreational routes and PRoW of significance in the local area are not anticipated during operation. It states that disruption to these receptors during maintenance would be avoided as far as possible and managed with a PRoW Management Plan. On this basis, and due to the infrequent, temporary and transient nature of operational and maintenance phase activities, the Inspectorate agrees that significant effects would be unlikely. The Inspectorate agrees that this matter can be scoped out of the ES.	<p>A PRoW Management Plan will be produced as part of the Preliminary CoCP. It will detail any potential permanent or temporary closures and the proposed management of any closures.</p> <p>This matter has been scoped out of the assessment for operation and maintenance.</p>
ID 3.11.13 (Tables 16.16 and 16.20)	Potential temporary or permanent loss of development land, utilities and renewables infrastructure (operation and maintenance)	The Scoping Report states that no significant effects on development land and utilities and renewable infrastructure are anticipated during operation, and that disruption to development land during maintenance would be avoided as far as possible. The Inspectorate agrees that significant effects are unlikely due to the infrequent, temporary and transient nature of operational and maintenance phase activities. This matter can be scoped out of the ES.	For the purposes of assessment within the Supplementary PEI Report Volume 2 Part B Chapter 11 Socio-economics, Recreation and Tourism and the June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Chapter 11 Socio-economics, Recreation and Tourism (Ref 1), the 'development land' receptor now includes existing and proposed land used for above ground renewable energy generation (solar and onshore wind farms),

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			<p>alongside development land allocations set out in local planning policy.</p> <p>An assessment of the direct and indirect effects of the Project on above ground renewable energy generation infrastructure (solar and onshore wind farms) as socio-economic receptors will be presented in the ES. At the PEI stage, a reasonable worst-case scenario approach has been applied in relation to solar farms that intersect the draft Order limits, which assumes that these will be directly impacted and would therefore have potential for likely significant effects by virtue of potential temporary or permanent loss of land during construction and operation.</p> <p>For solar farms located within the Study Area and outside the draft Order limits, there are no likely significant effects given there would be no direct impact on these assets from a loss of land or an operational perspective. At the PEI stage, it is considered that solar farms that are situated within the Study Area and do not intercept with the draft Order Limits are anticipated to be indirect, adverse and temporary, with impacts potentially likely to be experienced primarily during the construction stage. In relation to above ground renewable energy generation (solar and onshore wind farms), the likely significance of effects will be determined at ES stage when the necessary information from all relevant topic specialists is available and confirmed in addition to landowner consultation, to help inform determination of the receptors' magnitude of change.</p> <p>Utilities will be considered within the Statement of Reasons and Schedule of Negotiations. The documents will detail which Utilities Organisations are affected by the Project, and which assets are affected. They will also report how the Project expects to manage the assets to ensure a continuation use and minimise any potential impacts upon them.</p>
ID 3.11.4 (Tables 16.16 and 16.20)	Potential temporary or permanent loss of open space (operation and maintenance)	The Scoping Report states that no significant effects on open space are anticipated during operation, and disruption to open space during maintenance would be avoided as far as possible. Given the limited amount of open space within the Scoping Boundary (as depicted on Figure 17.4), and taking into account the infrequent, temporary and transient nature of operational and maintenance phase activities, the Inspectorate agrees that significant effects are unlikely and that this matter can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment for operation and maintenance.
ID 3.11.5 (Tables 16.16 and 16.20)	Potential temporary or permanent loss of, or impacts on communities, community facilities, visitor attractions and businesses (construction, operation and maintenance)	The Scoping Report states that the Proposed Development has been designed to avoid direct effects on these receptors as far as possible and that should this change, and these receptors are likely to be directly impacted, these would be included in the assessment as appropriate for the ES. Subject to this caveat, the Inspectorate agrees that the potential temporary or permanent loss of, or impacts on communities, community facilities, visitor attractions and businesses can be scoped out of the ES.	<p>Potential temporary or permanent loss of residential property, access has been scoped out of the June 2025 PEI Report and the Supplementary PEI Report, on the basis that direct impacts would be avoided on these receptors, with indirect effects managed through the CTMP and CEMP. Should this position change, this would be reported within the ES.</p> <p>Supplementary PEI Report Volume 2 Part B Chapter 11 Socio-economics, Recreation and Tourism and June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Chapter 11 Socio-economics, Recreation and Tourism (Ref 1) consider the potential for indirect impacts on community facilities and local businesses</p>

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
			(including those within the tourism sector) owing to their importance on a local level. Supplementary PEI Report Volume 2 Part C Chapter 6 Socio-economics, Recreation and Tourism considers the potential for indirect impacts on affected communities, the labour market and strategic visitor attractions within the Section 5 Study Area. Both Part B and C provide a preliminary assessment of the receptor types and, report any proposed mitigation measures. Both Parts will be reviewed and updated accordingly at ES stage.
ID 3.11.6 (Tables 16.16 and 16.20)	Potential temporary or permanent loss of access and impact on amenity on affected communities, community facilities, visitor attractions and businesses (indirect effects) (operation and maintenance)	On the basis that access to these receptors would be reinstated post construction, and that their ongoing use would be unaffected during operation and maintenance activities, the Inspectorate agrees that significant effects are unlikely and that the potential temporary or permanent loss of access and impact on amenity on affected communities, community facilities, visitor attractions and businesses can be scoped out of the ES. The ES should demonstrate that such reinstatement is achievable and should uncertainty remain, an assessment of likely significant effects should be provided.	Potential for impacts on the amenity of affected communities, community facilities, visitor attractions and businesses (indirect effects) has been scoped out of the assessment for operation and maintenance stages. The ES will include further detail on measures to ensure suitable reinstatement of accesses post construction. Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice includes associated measures, including the completion of pre-commencement condition surveys to ensure that the standard of reinstatement at least meets that recorded in the pre-condition survey (control measure GG05).
ID 3.11.7 (Tables 16.16 and 16.20)	Potential for impacts on the availability of tourism accommodation (operation and maintenance)	The Inspectorate agrees that the scale of operational employment generated is unlikely to result in significant effects on tourism accommodation availability and that the potential impacts on the availability of tourism accommodation can be scoped out of the ES.	Potential for impacts on the availability of tourism accommodation has been scoped out of the assessment for operation and maintenance stages. Supplementary PEI Report Volume 2 Part C Chapter 6 Socio-economics, Recreation and Tourism considers the impact upon tourism bedspace availability within the Section 5 Study Area during construction, and this will be reviewed and updated at ES stage. Indirect effects including those relating to amenity will be monitored and managed through the CEMP, CTMP, and appropriate management will reduce the potential for significant effects.
ID 3.11.8 (Tables 16.16 and 16.20)	Potential temporary or permanent loss of residential property, access, and impact on amenity - direct or indirect effects (construction, operation and maintenance).	The Scoping Report states that the emerging preferred corridor for the Proposed Development and substation siting areas would avoid acquisition or over-sail of residential properties. Indirect effects such as access and noise would be managed through the proposed Construction Transport Management Plan (CTMP) and Construction Environment Management Plan (CEMP) to reduce the potential for significant effects. The Inspectorate agrees that the potential temporary or permanent loss of residential property, access can be scoped out of the ES on this basis. However, should acquisition or over-sail of residential properties be required, the potential loss of property, access and impact on amenity should be assessed, where significant effects are likely.	Potential temporary or permanent loss of residential property, access have been scoped out of the June 2025 PEI and the Supplementary PEI Report on the basis that direct impacts would be avoided on these receptors, with indirect effects managed through the CTMP and CEMP. Should this position change, this would be reported within the ES. Should acquisition or over-sail of residential properties be required, the potential loss of property, access and impact on amenity would be assessed within the ES.
ID 3.11.9 (Para 16.9.2)	Commercial agreements for land, financial effects on businesses and property values	The Inspectorate agrees that the commercial agreements for land, financial effects on businesses and property values can be scoped out of the assessment	No further action required, this matter has been scoped out of the assessment.
ID 3.11.10 (Appendix 19.1 Table 19A.1)	Aviation report	Table 19A.1 of Appendix 19.1 states that an aviation report will be produced to identify all airfields and airstrips and will set out	An aviation report will be submitted as part of the DCO Application. Information from the aviation report will be used to

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		potential issues for each. This is stated to be identified in Chapter 16 Socio-economics, Recreation and Tourism, however there is no further reference to it within Chapter 16. This information should be summarised within the ES, with consideration also given to potential impacts on Ministry of Defence assets, where significant effects are likely.	<p>inform the Socio-economic, recreation and tourism assessment at ES stage.</p> <p>A specialist aviation consultant has been engaged by National Grid to support ongoing discussions and analysis relating to the operational safety of airfields in the vicinity of the Project. The findings of this initial analysis have been used to inform routing and siting decisions as part of the development of the Project. There are no Royal Air Force (RAF) stations within 2 km of the overhead line to obstacle clearances.</p> <p>Preliminary analysis of potential impacts to aviation receptors is outlined in June 2025 Design Development Report (Ref 3). PEI Report Volume 2 Part B Sections 1-7 Chapter 11 Socio-economics, Recreation and Tourism set out the relevant baseline and explain how aviation will be assessed with a specialist standalone report in support of the ES.</p> <p>A more detailed analysis of potential impacts on aviation receptors will be used to inform the Socio-economic, recreation and tourism assessment at ES stage, including information that will inform the determination of the sensitivity and magnitude of change in connection with users of airfields as socio-economic receptors. Further engagement will be undertaken with airfield owners including Ministry of Defence/RAF stations and operators as the Project progresses.</p>
Air Quality			
ID 3.9.1 (Table 14.2 and 14.7)	Non-Road Mobile Machinery (NRMM) emissions and static equipment combustion (construction, operation and maintenance)	<p>The Scoping Report states that the non-road mobile machinery emissions and static equipment combustion has been ‘provisionally’ scoped out on the assumption that the work would be short term in nature and best practice would be followed within the CoCP and NRMM standards. It is unclear from the Scoping Report what measures and standards are being referred to.</p> <p>Limited information has been provided in the Scoping Report regarding the likely use of NRMM. Specifically, no information has been provided as to the type, number, location or operational hours of such machinery and likely emissions, other than references to the minimal and temporary nature of NRMM use. On this basis the Inspectorate is unable to scope this matter out at this stage.</p> <p>The ES should include an assessment of NRMM emissions which are likely to result in significant effects or otherwise present a justification in the ES as to why significant effects are not likely to occur. Where mitigation measures are being relied upon, these should be secured in the draft DCO.</p>	<p>The projected number, type and location of NRMM plant will be included in the ES and screened against current guidance to determine the need for detailed assessment. Where screening indicates that there is potential for significant effects, these will be assessed in further detail and the findings reported in the ES. However this detail is not included within the June 2025 PEI Report or the Supplementary PEI Report PEI Report.</p> <p>Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice includes measure AQ07, which requires that plant and NRMM with an engine power rating of 37 kW to 560 kW will meet Euro Stage IV standards as a minimum.</p>
ID 3.9.2 (Table 14.2 and 14.7)	Dust emissions (operation and maintenance)	The Inspectorate agrees that significant effects are unlikely due to the infrequent, temporary and transient nature of operational and maintenance phase activities. Dust emissions can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.9.3 (Table 14.2 and 14.7)	Vehicular emissions (operation and maintenance)	The Scoping Report states that the number of operational and maintenance trips are not anticipated to exceed the Institute of Air Quality Management (IAQM) (2017) Land-Use Planning and	As reported within the June 2025 PEI Report and the Supplementary PEI Report, screening of preliminary projections of operational and maintenance vehicle trips has been undertaken

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		Development Control: Planning for Air Quality screening criteria. Provided the ES can demonstrate that this is the case, the Inspectorate agrees the vehicular emissions can be scoped out of from further assessment. Should the number of movements exceed this threshold, the Inspectorate expects the ES to assess the likely significant effects of increased operational and maintenance traffic on these receptors.	based upon the traffic data currently available. None of these flows exceed the EPUK/IAQM criteria. Rescreening of traffic flows will be undertaken during preparation of the ES. Should operational/maintenance traffic on any links exceed the EPUK/IAQM criteria, detailed quantitative modelling will be undertaken and the results reported in the ES.
ID 3.9.4 (Para 14.10.4)	Emissions from diverted traffic and road closures	The Inspectorate agrees that vehicle emissions associated with diverted traffic can be scoped out of the ES, provided it can be demonstrated that the predicted volumes of diverted traffic would not exceed the relevant indicative criteria for air quality assessment set out in the IAQM guidance.	Given that emissions from diverted traffic have been (provisionally) scoped out of the ES, the June 2025 PEI Report and the Supplementary PEI Report do not include any assessment of associated air quality impacts and effects. However, where road closures are required or there would be potential for diversionary effects upon traffic due to congestion, screening of the duration and the associated changes in traffic flows will be undertaken during development of the ES. Should changes in traffic flows on any road links (due to traffic diversion) exceed the EPUK/IAQM criteria, detailed quantitative modelling will be undertaken and the results reported in the ES.
ID 3.9.5 (Para 14.4.1)	Study area	The Study Area for ecological designated sites described in paragraph 14.4.1 do not accord with those detailed in Table 14.1. The Study Areas should be consistently described and applied within the ES, following Natural England's guidance, unless a robust justification for deviation from it can be provided.	The construction dust Study Area has been updated following Natural England's Scoping Response. A screening distance of 200m from the draft Order Limits has been used for the purposes of the June 2025 PEI Report and the Supplementary PEI Report and is proposed to be used for the updated assessments reported in the ES. The Study Area for the assessment of impacts upon ecological receptors due to road traffic emissions associated with the Project includes ecological sensitive receptors within 200 m of any road links where the projected changes in traffic flow exceed IAQM guidance thresholds (Ref 7).
Health and Wellbeing			
ID 3.12.1 (Paras 17.1.2 and 17.62 and Tables 17.9 and 17.13)	Electromagnetic fields (EMF) - potential permanent impacts on local residents and workers associated with the generation of EMFs (operation)	<p>The Scoping Report states that the Proposed Development would be designed to comply with existing National Grid standards and the guidelines and policies detailed in NPS-EN5, including the International Commission on Non-Ionizing Radiation Protection guidelines to ensure that all equipment will comply with public EMF exposure limits. It confirms that an EMF report will be prepared as part of the Proposed Development but separate to the EIA process.</p> <p>The Inspectorate agrees that an assessment of the actual effects from EMFs during operation can be scoped out provided that the ES contains a summary of the compliance report and confirms that there is no potential for significant environmental effects. However, the perceived effects of EMF and impacts on mental health should be assessed (see ID 3.12.2 below).</p>	<p>The Applicant confirms that the Project is being designed to comply with public EMF exposure limits, existing National Grid standards and the guidelines and policies detailed in NPS-EN5. An EMF report will be prepared as part of the DCO application but separate to the EIA process.</p> <p>Supplementary PEI Report Volume 2 Part C Chapter 7 Health and Wellbeing considers health pathways for specific health effects. By looking at health pathways, all relevant health aspects (including physical activity and mental health), will be considered for that pathway. National Grid confirms that the assessment considers the perceived effects of EMF and associated impact on mental health.</p> <p>The assessment of effects upon health and wellbeing, including perceived effects of EMF and impacts on mental health, will be updated within the ES submitted in support of the DCO application.</p>
ID 3.1.22 (Table 17.1)	Mental health assessment	Table 17.1 proposes to scope out a mental health assessment, but states that further engagement will be undertaken with Norfolk County Council to ensure mental health is considered	Supplementary PEI Report Volume 2 Part C Chapter 7 Health and Wellbeing considers health pathways for specific health effects. By looking at health pathways, all relevant health aspects

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		appropriately. No further reference is made within the Scoping Report to mental health. The Inspectorate does not agree the mental health assessment can be scoped out. Impacts on mental health, in particular anxiety or concern in relation to EMF exposure, should be assessed across the entire Study Area. The UK Health and Security Agency has provided comments in this regard.	(including physical activity and mental health), will be considered for that pathway. National Grid confirms that the assessment considers the perceived effects of EMF and associated impact on mental health. The assessment of effects upon health and wellbeing, including perceived effects of EMF and impacts on mental health, will be updated within the ES submitted in support of the DCO application.
ID 3.1.23 (Table 17.9)	Increased employment for the operational workforce, leading to improved health outcomes (operation)	The Inspectorate considers that the increased employment for the operational workforce, leading to improved health outcomes can be scoped out of the ES as the scale of operational employment generated is likely to be very limited and therefore unlikely to result in significant effects.	No further action required, this matter has been scoped out of the assessment.
ID 3.1.24 (Table 17.9)	Potential temporary changes in neighbourhood quality leading to worsened health outcomes (maintenance)	The Inspectorate considers that the potential temporary changes in neighbourhood quality leading to worsened health outcomes can be scoped out of the ES as the scale of maintenance activities is unlikely to cause potential for significant adverse health-related effects.	No further action required, this matter has been scoped out of the assessment.
ID 3.1.25 (Table 17.9)	Impact on local residents' access to promoted recreational routes adjacent to Proposed Development infrastructure, potentially leading to worsened health outcomes (maintenance)	The Inspectorate considers that significant effects are unlikely on the basis that no disruption to promoted recreational routes is expected during maintenance of the Proposed Development. The impact on local resident's access to promoted recreational routes adjacent to Proposed Development infrastructure can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.1.26 (Table 17.9)	Healthcare and social infrastructure	Healthcare facilities are identified on Figure 17.2 but are not detailed within Table 17.6 (which identifies educational facilities only). The descriptive text within the ES should provide commentary on all relevant facilities.	Healthcare and social infrastructure facilities located within 500 m of the Project boundary will be identified and included within the Health and Wellbeing baseline in the ES. This is set out in Supplementary PEI Report Volume 3 Part C Appendix 7A Health and Wellbeing Baseline Statistics and illustrated in Supplementary PEI Report Volume 2 Part C Figure 7.4 Healthcare and Social Infrastructure .
ID 3.1.27 (N/A)	Impacts on transport links to healthcare facilities – construction	The ES should assess impacts on transport routes to and between healthcare facilities, where significant effects are likely. This should consider access by public users of such facilities, as well as by the healthcare providers themselves. Consideration should be given to the impacts of the Proposed Development on air ambulance access, where significant effects are likely. Appropriate cross reference should be made to the Traffic and Transport chapter of the ES.	The Health and Wellbeing chapter of the ES will consider the potential temporary and permanent changes in access to healthcare facilities by the public, healthcare providers and air ambulance. This is set out in Supplementary PEI Report Volume 2 Part C Chapter 7 Health and Wellbeing . Where applicable, this will be cross-referenced with the Traffic and Movement chapter of the ES.
ID 3.1.28 (N/A)	Vulnerable populations	Consideration should be given to the potential for impacts on vulnerable populations, as required by the IEMA guidance referred to (Determining Significance for Human Health in Environmental Impact Assessment).	The Health and Wellbeing chapter of the ES will consider the potential health effects of the Project on affected population groups. This includes vulnerable members of the community and will inform the sensitivity of receptors. Separate to the ES, an Equality Impact Assessment (EqIA), will be undertaken in order to identify any differential or disproportionate impacts on vulnerable people as a result of the Project, in line with the Equality Act 2010. The Equality Impact Assessment will be submitted as part of the application.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
Climate Change			
ID 3.13.1 (Para 18.1.23) Appendix 18A	Climate Change Resilience - Vulnerability of the Proposed Development to climate change	The Climate Change Resilience (CCR) Screening Assessment (Appendix 18A) sets out the potential impacts of current and future climate change on the construction, operation, and maintenance of the Proposed Development along with proposed design, control and management measures. It confirms that vulnerability of the Proposed Development to climate change in terms of flood risk would be considered as part of the proposed Flood Risk Assessment (FRA) and associated analysis presented in Chapter 10 (Water Environment). Provided that all design and control measures identified in the CCR are demonstrably secured, the Inspectorate agrees that significant effects are unlikely and that no further assessment of the Proposed Development's vulnerability to climate change is required.	<p>The design and control measures identified in the CCR Screening Assessment of the EIA Scoping Report would be secured through design and the DCO requirements, via measures outlined within the Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice.</p> <p>A route-wide Preliminary Flood Risk Assessment was included within the June 2025 PEI Report. Based upon the further design development completed for Section 5 of the Project, this preliminary assessment has been updated as part of the Supplementary PEI Report and is included as Supplementary PEI Report Volume 3 Part C Appendix 4A Preliminary Flood Risk Assessment.</p> <p>The completed FRA will be submitted with the DCO Application and will include consideration of the vulnerability of the Proposed Development to climate change in terms of flood risk.</p>
ID 3.13.2 (Para 18.1.3)	In-Combination Climate Change Impact (ICCI) assessment	The Scoping Report proposes to scope out a standalone ICCI assessment in the ES and instead, each environmental chapter will take account of projected future climate change within their future baseline. The Inspectorate agrees to this approach.	<p>Although the EIA Scoping Report proposed to scope out a standalone ICCI assessment in the ES (and instead, each environmental chapter would take account of projected future climate change within their future baseline), for simplicity and to avoid excessive repetition across ES chapters, the ICCI assessment will now be reported within the Climate Change chapter of the ES and not within the individual topic chapters.</p> <p>In line with the relevant IEMA guidance on ICCI assessment, the assessment will be undertaken, at the ES stage, after the likely significant environmental effects and their associated magnitudes have been identified within the other topic chapters within the ES. The assessment methodology for the proposed ICCI assessment is set out within Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope.</p>
ID 3.13.3 (Table 18.3)	Maintenance of the built asset components and systems (operation)	The Scoping Report states that the Proposed Development would not be designed with the expectation of any significant plant maintenance and repair activities being required. The Inspectorate agrees that the maintenance of the built asset components and systems can be scoped out from the ES on this basis.	No further action required, this matter has been scoped out of the assessment.
ID 3.13.4 (Table 18.3)	Refurbishment of the built asset components and systems (operation)	Table 18.3 states that the Proposed Development would not be designed with the expectation of refurbishment being required. The Inspectorate notes this contradicts the potential refurbishment activities detailed in paragraphs 4.10.6 – 4.10.10. Nevertheless, given the nature of these activities, the Inspectorate agrees that significant effects are unlikely and that the refurbishment of the built asset can be scoped out from the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.13.5 (Table 18.3)	Operational energy and water use	The Inspectorate considers that the operational energy and water use can be scoped out of the ES on the basis that minimal operational energy use or water use is expected. The Inspectorate notes that water use during construction is not explicitly scoped in. For the avoidance of doubt, the Inspectorate expects any likely	Water use during construction will be included within the Greenhouse Gas (GHG) assessment to be presented within the ES. Note that at the time of undertaking the assessment for the June 2025 PEI Report and the Supplementary PEI Report, the early design stage meant that the level of design information

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
		significant effects from water use for concrete batching, dust suppression and welfare to be assessed.	available did not allow any calculation of likely GHG emissions and so instead, a qualitative appraisal of likely significance is presented in the June 2025 PEI Report and the Supplementary PEI Report.
ID 3.13.6 (Table 18.3)	Users' utilisation of infrastructure	In relation to the applicant proposing to scope out the users' utilisation of infrastructure: The Scoping Report states that the Proposed Development is not expected to have any direct and quantifiable impact on greenhouse gas (GHG) emissions from electricity use that is distinct from wider national trends on grid decarbonisation. The Inspectorate agrees that this matter can be scoped out from the ES on this basis.	No further action required, this matter has been scoped out of the assessment.
ID 3.13.7 (Tables 8.3 and 18.6)	Decommissioning	As noted in ID 2.2.1 of this Scoping Opinion, the Inspectorate agrees that decommissioning impacts can be scoped out of the ES.	No further action required, this matter has been scoped out of the assessment.
ID 3.13.8 (Table 18.6)	Emissions associated with preconstruction	The Scoping Report does not explain what activities are considered to form part of the 'Pre-construction' phase. The Inspectorate has assumed this to include pre-construction surveys and site clearance. On this basis, the Inspectorate agrees that any associated emissions would be small and not likely to be material to the assessment. The Inspectorate agrees that this matter can be scoped out from the ES on this basis.	The PAS 2080 'Pre-construction' boundary stage considers emissions associated with land and associated fees/advice. For this Project, it is assumed to include preliminary studies and works, which are largely office-based and are assumed to be insignificant. Note that any site clearance works during construction would be considered as part of the 'construction process stage' and are therefore scoped into the assessment. Pre-construction activities as described above have been scoped out of the assessment.
Major Accidents and Disasters			
ID 3.14.1 (Table 19.3 and Appendix 19A)	Natural hazards: <ul style="list-style-type: none">• geophysical;• hydrological;• climatological;• meteorological; and• biological	Table 19A.1 lists the potential natural hazards which the Applicant does not consider the Proposed Development to be vulnerable to or be a potential cause of. The Inspectorate agrees that significant effects on/from natural hazards are not likely and that these matters can be scoped out of the ES based on the reasoning set out in Appendix 19A, apart from flood risk. The Inspectorate notes that flood risk is scoped out of the Major Accidents and Disaster ES chapter on the basis that a proposed FRA will be submitted with the ES. The Inspectorate is content with this approach on the basis that the FRA assesses the vulnerability of the Proposed Development to flood risk and the potential for the Proposed Development to increase flood risk elsewhere.	<p>A route-wide Preliminary Flood Risk Assessment was included within the June 2025 PEI Report. Based upon the further design development completed for Section 5 of the Project, this preliminary assessment has been updated as part of the Supplementary PEI Report and is included as Supplementary PEI Report Volume 3 Part C Appendix 4A Preliminary Flood Risk Assessment.</p> <p>The route-wide Flood Risk Assessment will be updated in advance of submission of the DCO application and will be informed by further hydrological modelling and engagement with the relevant stakeholders. The FRA will include an assessment of the vulnerability of the Project to flood risk and the potential for the Project to increase flood risk elsewhere.</p> <p>A preliminary assessment of the effects of Section 5 of the Project upon flood risk to third party receptors is reported within Supplementary Report Volume 2 Part B Chapter 4 Water Environment and Flood Risk. For all other sections of the Project, an equivalent preliminary assessment was reported in the June 2025 Supplementary Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 6 Water Environment and Flood Risk (Ref 1).</p>
ID 3.14.2 (Appendix 19A - Table 19A.1)	Technological or manmade hazards: <ul style="list-style-type: none">• accidents - societal, industrial, urban, transport, and pollution;	Table 19A.1 lists the potential technological or man-made hazards which the Applicant does not consider the Proposed Development to be vulnerable to or be a potential cause of. The Inspectorate agrees that significant effects are not likely and that these matters	No further action required, these matters have been scoped out of the assessment.

Reference	Description	Planning Inspectorate Scoping Opinion Comment	Grimsby to Walpole Applicant Response
	<ul style="list-style-type: none">• utilities failure;• malicious attacks; engineering accidents and failures; <ul style="list-style-type: none">• human error;• sabotage or arson on proposed infrastructure during construction and operation; and• unexploded ordnance.	can be scoped out of the ES based on the reasoning set out in Appendix 19A.	
ID 3.14.3 (Appendix 19A - Table 19A.1)	Standards, measures and processes	Notwithstanding the Inspectorate’s agreement to scope out an assessment of effects for Major Accidents and Disasters from the ES, the description of the Proposed Development in the ES should describe any standards/ measures and processes which would be relied on to exclude likely significant effects and explain how they would be secured and implemented as part of the DCO.	Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description includes a summary of standards/measures and processes which have been relied upon to exclude likely significant effects associated with Major Accidents and Disasters. This information will be reviewed and updated as appropriate during development of the ES.

References

- Ref 1 Planning Inspectorate. (2024) Scoping Opinion: Proposed Grimsby to Walpole Project. [online]. Available at: <https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020036-000109-Scoping%20Opinion%202017%20EIA%20Regs.pdf> [Accessed 23 October 2024].
- Ref 2 National Grid Electricity Transmission (2025). Grimsby to Walpole Preliminary Environmental Information Report [online]. Available at: <https://www.nationalgrid.com/the-great-grid-upgrade/grimsby-to-walpole/document-library#4257225834-3023854277> [Accessed 12 September 2025].
- Ref 3 National Grid Electricity Transmission (2025). Grimsby to Walpole Design Development Report [online]. Available at: <https://www.nationalgrid.com/document/560486/download> [Accessed 28 October 2025].
- Ref 4 Department for Energy Security & Net Zero (2024). National Policy Statement for Electricity Networks Infrastructure (EN-5) [online]. <https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5> [Accessed 08 July 2024].
- Ref 5 National Grid (2023). Grimsby to Walpole and North Humber to High Marnham Strategic Options Report. [online]. Available at: <https://www.nationalgrid.com/electricity-transmission/document/152606/download> [Accessed 22 April 2025].
- Ref 6 Planning Inspectorate (2024). Regulation 32 – Transboundary screening. [online] Available at: <https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020036-000117-Regulation%2032%20Transboundary%20Screening%20document.pdf> [Accessed: 22 April 2025].
- Ref 7 IAQM 2024 [online] Available at: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf> [Accessed 20 November 2024].

4B. Environmental Impact Assessment Methodologies and Scope

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1. Introduction

1. Introduction

- 1.1.1 This appendix to **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information** is part of the wider suite of documents that make up the Supplementary PEI Report for the Grimsby to Walpole Project (the Project). This Appendix sets out the methodologies applied in completing the preliminary assessments reported within each topic chapter of **Supplementary PEI Report Volume 2 Part B Section Specific Assessment** and **Supplementary PEI Report Volume 2 Part C Route-wide Assessment**.
- 1.1.2 These methodologies are unchanged from those presented within the previously published June 2025 PEI Report for the Grimsby to Walpole Project.
- 1.1.3 These methodologies are also proposed to be adopted for the purposes of the subsequent Environmental Statement (ES) for the Project. The appendix specifically describes the methods used to determine the baseline conditions, sensitivity of receptors and magnitude of change, and sets out the approach to judging the level effects and whether these are significant or not.
- 1.1.4 Annex A also provides a list of committed development which have been identified at this preliminary stage for inclusion in the future baseline scenarios which will be further refined and assessed during development of the ES. It is noted that a shortlist of committed developments which are proposed for consideration within the Cumulative Effects Assessment is also included within **Supplementary PEI Report Volume 3 Part C Route-wide Appendix 9B Cumulative Effects Assessment Shortlist of Committed Developments**.

2. Landscape

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2. Landscape

2.1 Overview

- 2.1.1 This Appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary landscape assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.
- 2.1.2 Landscape assessment deals with the effects on the landscape as a resource in its own right (landscape receptors), whilst the assessment of visual effects considers the changes to specific views and general visual amenity experienced by people (visual receptors).
- 2.1.3 Landscape and visual assessments are inter-related. Visual effects can be considered independently of the effect on the landscape in which it is seen, but landscape effects require consideration of the visual effects of the Project.

2.2 Guidance Specific to Landscape Assessment

- 2.2.1 In accordance with the approach to the Environmental Impact Assessment (EIA) outlined in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**, the landscape assessment, cumulative landscape assessment, and presentation of landscape effects adhere to relevant legislation and standards. Additionally, the assessment follows the applicable guidelines including:
- i. Landscape Institute and Institute for Environmental Management and Assessment (Institute of Environmental Management and Assessment (IEMA)) (2013) Guidelines for Landscape and Visual Impact Assessment – 3rd Edition (GLVIA3) (Ref 2);
 - ii. Technical Guidance Note 01/24 Notes and Clarifications on aspects of the 3rd Edition Guidelines on Landscape and Visual Impact Assessment (GLVIA3) (Landscape Institute, 2024) (Ref 3);
 - iii. Technical Information Note (TIN) Landscape Character Assessment (Technical Information Note 08/15), 2016 (Ref 4);
 - iv. Technical Guidance Note (TGN) 02/21 Assessing landscape value outside national designations, 2021 (Ref 5);
 - v. Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals, 2019 (Ref 6);
 - vi. Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment, 2024 (Ref 7);

- vii. An Approach to Landscape Sensitivity Assessment – to inform spatial planning and land management Natural England, 2019 (Ref 8); and
- viii. An Approach to Landscape Character Assessment, 2014 (Ref 9).

2.3 Data Sources

2.3.1 The following data has been used to inform the baseline conditions:

- i. Ordnance Survey (OS) 1:10,000, 1:25,000, 1:50,000 and 1:250,000 base mapping;
- ii. OS Terrain® 50 mid-resolution and LIDAR Composite 2017 – 50 cm Digital Terrain Model (DTM);
- iii. Google Earth Pro aerial photography, and Google Maps Street View;
- iv. Base mapping from ArcGIS Map Service;
- v. Open source Geographic Information System (GIS) data;
- vi. Local authority local plans and core strategies;
- vii. Local authority Landscape Character Assessments;
- viii. Natural England National Character Area (NCA) Profiles (Ref 10); and
- ix. Site survey carried out during several visits under differing weather conditions between spring 2023 and summer 2024.

2.4 Approach to Landscape Assessment

Scope of Assessment

- 2.4.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 11) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 12). The scope has also been informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Landscape chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 2.4.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 13). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 2.4.3 **Table 2.1** identifies the receptors that are scoped in or out of the landscape assessment. Those that are scoped out, reflect the position in the Scoping Opinion (Ref 11).

Table 2.1 Scope of landscape assessment

Receptor	Potential effects considered
National Landscapes	
Lincolnshire Wolds National Landscape (AONB)	Indirect effects on the composition and character of the landscape during construction and operation. This is due to the proximity of the Project to the designated area and likely effects on the special qualities and purposes of the designation.
National Character Areas (NCA)	
NCA 42: Lincolnshire Coast and Marshes	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character. The assessment of effects on NCAs will be presented in the ES as it is informed by the detailed landscape assessments.
NCA 46: The Fens	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character. The assessment of effects on NCAs will be presented in the ES as it is informed by the detailed landscape assessments.
Locally Designated Landscapes	
Great Limber and the Chalk Wolds Estates Area of Great Landscape Value (AGLV)	Scoped in for operation Potential for indirect effects on views with consequential effects on landscape character.
Local Landscape Types (LCT), Regional Landscape Character Types (RLCT) and Landscape Character Areas (LCA)	
North East Lincolnshire LCT 2: Open Farmland	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
North East Lincolnshire LCT 3: Wooded Open Farmland	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
North East Lincolnshire LCT 4: Flat Open Farmland	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
North East Lincolnshire LCT 5: Sloping Farmland	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
North East Lincolnshire LCT 6: High Farmland	Scoped in for construction and operation

Receptor	Potential effects considered
	Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
East Midlands RCLT 2A: Settled Fens and Marshes	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
East Midlands RLCT 2B: Planned and Drained Fens	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
East Midlands RLCT 2C: Fen and Marsh Margin Farmlands	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
East Midlands RLCT 7A: Chalk Wolds	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
East Midlands RLCT 7B: Wolds Scarps, Ridges and Valleys	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
Fenland LCA The Fens	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
Fenland LCA Wisbech Settled Fen	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
Kings Lynn and West Norfolk LCA D2: Walpole, Terrington and Clench Warton	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
Kings Lynn and West Norfolk LCA D3: Terrington St John	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
Kings Lynn and West Norfolk D4: Emneth, West Walton and Walsoken	Scoped in for construction and operation Potential for direct effects on landscape elements and features and indirect effects on overall composition and character.
Project Wide Effects	
Nighttime lighting	Scoped in for construction and operation During construction there may be a requirement for nighttime lighting for substations, construction compounds and site access points along the route. During operation, there may be a requirement for 24/7 security lighting at substation locations.

Receptor	Potential effects considered
Localised widening of public highways	<p>Scoped in for construction</p> <p>Potential for localised direct effects on landscape elements and features and indirect effects on overall composition and character.</p>

Study Area

- 2.4.4 The ZTV map, which incorporates screening elements such as buildings and woodland, is presented in **Supplementary PEI Report Volume 2 Part B Figure 3.2 Zone of Theoretical Visibility (ZTV)** and June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Figure 3.2 Zone of Theoretical Visibility (ZTV) (Ref 1). Based on pylon locations provided by design engineers, the ZTV identifies areas where the proposed 400 kV overhead line may theoretically be visible. It also helps determine the extent of the Study Area for the landscape assessment. The theoretical visibility of individual pylons is limited to a maximum distance of 10 km, as beyond this distance the pylons would be almost imperceptible.
- 2.4.5 The Study Area for the preliminary landscape assessment (based on the same approach which will be adopted when defining the EIA Study Area) extends 5 km from the Limits of Deviation (LoD) for the new 400 kV overhead line¹. This distance was informed by the ZTV, the scale and appearance of the pylons (as detailed in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**), field survey and professional judgment, and is considered sufficient to capture the likely significant landscape effects of the Project. Although the ZTV indicates potential visibility beyond 5 km in certain directions, based on experience of similar schemes, significant landscape impacts are highly unlikely to arise beyond this distance.
- 2.4.6 To ensure that all likely significant effects are captured in the assessment, the extent of the Study Area will continue to be reviewed in the light of feedback received during statutory consultation, ongoing site surveys, and following the production of updated ZTVs as the Project develops.

Approach to Defining the Study Area

- 2.4.7 The Study Area was informed by guidance on the perceived height of pylons when seen at varying distances (Ref 9). This study used a mathematical model to calculate the apparent height of a pylon when its true height and distance from a viewer are known.
- 2.4.8 The apparent height of a pylon is defined as the height that the structure would appear at arm's length (61 cm) from the viewer (i.e. the structure would appear to be the same height as an X-cm high object held at arm's length (61 cm) from the viewer).
- 2.4.9 The height of the pylons proposed for the Project are set out in **Supplementary PEI Report Volume 2 Part B Chapter 1 Overview of the Section and Description of**

¹ The Study Area for the preliminary assessment is measured from the LoD as significant effects are most likely to result from construction and operation of the new substations and 400 kV overhead line rather than the temporary access tracks, which in some instances could extend several kilometres from the draft Order Limits but are unlikely to result in significant effects.

the **Project** and June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Chapter 1 Overview of the Section and Description of the Project (Ref 1). On average they are approximately 50 m tall. Using the above calculation the apparent height of a 50 m tall pylon was calculated for varying distances from a viewpoint. The results are shown in **Table 2.2**.

Table 2.2 Apparent height of 50 m structure when viewed at arm’s length

Distance	Apparent Height
100 m	30.50 cm
200 m	15.25 cm
300 m	10.16 cm
400 m	7.63 cm
500 m	6.10 cm
1000 m (1 km)	3.05 cm
2000 m (2 km)	1.53 cm
5000 m (5 km)	0.61 cm
10000 m (10 km)	0.31 cm

- 2.4.10 At 5 km, which is the extent of the Study Area for the landscape assessment, the apparent height of a 50 m high pylon is 0.61cm. At this apparent height, the pylons are highly unlikely to have a significant landscape effect.
- 2.4.11 At 10 km, which is the extent of the Study Area for the cumulative landscape assessment, the apparent height of a 50 m high pylon is 0.31 cm. At this apparent height, the pylons alone would not give rise to significant landscape effects but when seen alongside another development, the overall effect of both projects may be considered significant.

The Study Area

- 2.4.12 The Study Area for the preliminary Landscape assessment is shown on **Supplementary PEI Report Volume 2 Part B Figure 2.1 Landscape Designations and Features** and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Figure 2.1 Landscape Designations and Features (Ref 1). The extent of the Study Area for the preliminary Landscape assessment (based on the same approach which will be adopted when defining the EIA Study Area), extends 5 km from the Limits of Deviation (LoD) for the new 400 kV overhead line². This distance was informed by the ZTV, the scale and appearance of the pylons (as detailed in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**), field survey and professional judgment, and is considered sufficient to capture the likely significant landscape effects of the Project. Although the ZTV indicates potential visibility

² The Study Area for the preliminary assessment is measured from the LoD for the new 400 kV overhead line as significant effects are most likely to result from construction and operation of the new substations and 400 kV overhead line rather than the temporary access tracks, which in some instances could extend several kilometres from the draft Order Limits but are unlikely to result in significant effects.

beyond 5 km in certain directions, based on previous experience of similar schemes, significant landscape impacts are highly unlikely to arise beyond this distance.

- 2.4.13 The preliminary cumulative Landscape assessment Study Area extends 10 km from the LoD for the new 400 kV overhead line. This radius was established to evaluate potential cumulative landscape impacts in conjunction with other existing, consented, and/or proposed developments.

Assessment Methodology

Definition of Landscape Receptors

- 2.4.14 The assessment of landscape effects, as defined in paragraphs 5.1 and 5.2 of GLVIA3 (Ref 2), means *“the effects of change and development on landscape as a resource. The concern ... is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.... The area of landscape that should be covered in assessing landscape effects should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner”*.
- 2.4.15 Two categories of landscape receptor are considered in the assessment:
- i. designated landscapes; and
 - ii. landscape character (combinations of landscape elements and aesthetic and perceptual aspects that make an area distinctive).
- 2.4.16 Reference is made in the assessment to ‘direct’ and ‘indirect effects’. Direct effects occur within the draft Order Limits and involve physical changes to components of the landscape, such as vegetation removal or the presence of new structures, while indirect effects arise from the interaction between the Project and its surrounding context for example, effects on the character and perception of the landscape.

Assessing Landscape Effects

- 2.4.17 The methodology used for conducting the landscape assessment builds upon the general assessment methodology outlined in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**. This ensures that the landscape assessment follows a consistent and structured approach in line with the overall EIA methodology.
- 2.4.18 The methodology draws on guidance in GLVIA3 (Ref 2) and its associated Notes and Clarifications (Ref 3). This is the established good practice guidance for landscape assessment and complies with the requirements of EN-1 (Ref 14) and EN-5 (Ref 15).
- 2.4.19 The GLVIA3 (Ref 2) approach to assessing landscape effects is summarised as follows:
- i. identify a Study Area - this is the geographical area where potential landscape effects from the Project could be experienced;
 - ii. establish baseline conditions - this involves desk studies and field surveys to evaluate the current landscape across the Study Area. Determine landscape receptor sensitivity - this involves making separate judgements on the value of the landscape and its susceptibility to change as a result of the Project;

- iii. assess effects on landscape receptors - effects are evaluated based on the size/scale, duration and reversibility, and geographical extent. This analysis helps determine the magnitude of change likely to occur; and
- iv. apply professional judgement - an overall judgment on the significance of effects is made by weighing the value of the landscape and its susceptibility to change against the magnitude of the anticipated change introduced by the Project.

2.4.20 This structured process allows for a comprehensive evaluation of how the landscape will be impacted and whether the changes are likely to be significant.

Establishing the Baseline

2.4.21 June 2025 PEI Report Volume 3 Part B Appendix 2B Landscape Character Baseline (Ref 1) provides a description of the landscapes across the Study Area based on published landscape character assessments. For each landscape character area, a preliminary judgement on the relative value attached to the landscape and its susceptibility to change arising from the Project is provided.

2.4.22 Field surveys are used to verify published data and to understand the perceptual characteristics of the landscape.

Assessing Effects on Landscape Receptors

2.4.23 GLVIA3 (Ref 2) states that the sensitivity of landscape receptors should be assessed in terms of the susceptibility of the landscape to change and the value attached to the landscape. The magnitude of change should be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect.

2.4.24 These aspects are considered together, to form a judgement on the overall significance of landscape effect. The remainder of this appendix sets out the methodology in more detail.

Establishing Landscape Sensitivity

Value of the Landscape

2.4.25 The baseline includes a description of the relative value of the landscape, which is unrelated to the nature of the Project. Page 3 of TGN 02-21 published by the Landscape Institute (Ref 4) defines 'landscape value' as "*the relative value or importance attached to different landscapes by society on account of their landscape qualities*".

2.4.26 An area of landscape may be valued for many reasons – for example its condition, scenic beauty, tranquillity or remoteness, its recreation opportunities, nature conservation or its historic and cultural associations. Development will not necessarily be incompatible with the valued qualities of a landscape as this will depend on the nature of the proposal and the characteristics of the landscape.

2.4.27 Nationally and internationally designated landscapes are generally accorded the highest value. The absence of a formal landscape designation, however, does not necessarily imply a landscape is of lower value. Paragraph 5.19 of GLVIA3 (Ref 2) describes value as "... *the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a whole variety of reasons. Considering value at the baseline stage will inform later*

judgements about the significance of effects. ...A review of existing landscape designations is usually the starting point in understanding landscape value, but the value attached to undesignated landscapes also needs to be carefully considered and individual elements of the landscape – such as trees, buildings or hedgerows – may also have value”.

- 2.4.28 The quality of a valued landscape is often explained in a citation for a designation, but where this isn't available, value can be determined through the application of a criteria-based comparative landscape approach supported by published documentation such as tourist leaflets, art and literature. The value of a landscape or view can also be informed by consultation feedback from people with local knowledge. This is in line with the latest guidance from Natural England (Ref 8) and the European Landscape Convention (Ref 16), which promote an 'all-landscapes approach', founded on the recognition of value in all landscapes.
- 2.4.29 The appraisal of landscape value includes consideration of the following factors:
- i. landscape character and quality;
 - ii. importance in terms of designations;
 - iii. scenic quality;
 - iv. conservation interests;
 - v. recreational value;
 - vi. perceptual aspects and tranquillity; and
 - vii. cultural associations.
- 2.4.30 The relative value of the landscape is described as very high, high, medium or low by applying the indicators listed in **Table 2.3**. Judgements are supported by narrative description linked back to evidence from the baseline study to explain the conclusions reached.

Table 2.3 Indicators of landscape value

Category	Indicators
Very High	Landscape of very high scenic quality, with all or most of the scenic/special qualities evident, including its flora, fauna, geological and geographical elements and features. Typically, internationally, or nationally designated e.g., National Park or National Landscape (Area of Outstanding Natural Beauty). Very good condition/very well-managed and intact. Historic interest of designated national or international importance, which contributes substantially to landscape character. Mainly characterised by natural components that are rare and distinctive. Very high recreational value which contributes substantially to recreational/visitor experience. Rich and valued cultural associations. Unique sense of place. No discordant features.
High	Landscape of high scenic quality, with considerable evidence of the scenic/special qualities, including its flora, fauna, geological and geographical elements, and features. Typically designated at a regional or local level such as Special Landscape Area (SLA) or Area of Great Landscape Value (AGLV). Good condition/well-managed and largely intact. Many natural components. Historic interest which contributes to landscape character. Recreational value which

Category	Indicators
	contributes to recreational/visitor experience. Valued cultural associations. Strong sense of place. Occasional discordant features.
Medium	A landscape with some evidence of scenic/special qualities, albeit with a degree of erosion due to the presence of infrastructure and/or inappropriate built development. A commonplace landscape which may be valued by the local community but has little or no wider recognition of its value. Average condition with some intactness but scope to improve management for land use. Limited historic interest. Some natural components. Limited recreational value and few visitors. No or very few recorded cultural associations. Some features worthy of conservation. Some noticeable discordant features.
Low	A landscape with greater presence of infrastructure and/or inappropriate built development which impacts on the scenic/special qualities of the landscape or one of low scenic quality or with many of the scenic/special qualities eroded. Little or no evidence of being valued by a community. Lack of management has resulted in degradation and poor condition. Limited to no historic interest. Limited to no recreational value. No recorded cultural associations. Frequent or dominant discordant features. Disturbed or derelict land requiring treatment.

Susceptibility of the Landscape

- 2.4.31 Susceptibility varies depending on the character of the landscape and the nature of the development. Therefore, it is tailored to the specific project. Determining the susceptibility of the landscape receptor involves:
- i. evaluating how the receptor's characteristics and qualities either align with or conflict with the changes introduced by the Project; and
 - ii. assessing the ability of the landscape to absorb or adapt to these changes while maintaining its baseline conditions.
- 2.4.32 Components of the landscape that typically inform the susceptibility of the landscape to the Project include:
- i. Landform
 - Steep, dramatic, or elevated landforms are generally more susceptible to the visual impact of high voltage electricity infrastructure. These landforms are often prominent and distinctive, which can result in skylining of pylons and gantries. Single and narrow ridges are especially vulnerable, particularly when the ridgeline is well-defined or steep, or when there are rock outcrops. More complex landforms might offer some screening or backdropping opportunities, but caution is needed to avoid overwhelming intricate landforms.
 - Broad valleys with smooth and regular lines tend to be less susceptible to high voltage electricity infrastructure. These valleys often provide a backdrop that visually encloses and integrates the infrastructure into the landscape.
 - ii. Landcover pattern

- This factor focuses on the character of the landscape as shaped by its landscape pattern, including the distribution of vegetation, rather than the material susceptibility of specific landcover types.
 - Landscapes with a variety or mosaic of characteristic or susceptible features such as trees and woodlands, hedgerows, or traditional/historic field patterns are generally more vulnerable to high voltage electricity infrastructure. In contrast, simpler, less cluttered landscapes with few distinctive features or where such patterns have been obscured are less susceptible.
 - Landscapes with past or ongoing commercial or industrial activities indicate lower susceptibility. Existing modern structures such as pylons, wind turbines, transport or utility infrastructure, and industrial development can reduce the landscape's susceptibility to high voltage electricity infrastructure. Similarly, visible impacts from activities such as quarrying, commercial forestry, or landfill can also lower susceptibility.
 - Depending on their scale and distribution, trees and woodland can reduce a landscape's susceptibility high voltage electricity infrastructure, especially when combined with landform.
- iii. Landscape Scale
- Scale is typically related to landform or landcover.
 - Landscapes with a larger scale are typically better able to absorb high voltage electricity infrastructure, as pylons and substation infrastructure tend to appear more in proportion to expansive surroundings. In contrast, small scale or intimate landscapes can be more vulnerable, as pylons tend to be more prominent in these settings.
 - Depending on the height differential between valley floors and hilltops, the susceptibility of a landscape to pylons can either increase or decrease. This is because the perceived size of the pylons may be altered.
 - The size and scale of high voltage electricity infrastructure particularly pylons may be further emphasised when compared with landscape features such as field patterns, landform, individual trees, and buildings. This comparison can highlight the scale and prominence of the pylons within the landscape, potentially making them appear more intrusive in relation to these features.
- iv. Prominent Landscape Features and Skylines
- Landscapes with prominent ridges or skylines are likely to be more susceptible to high voltage electricity infrastructure compared to skylines that are less prominent or have already been affected by visually intrusive structures.
 - The presence of distinctive or historic landscape features such as hilltop monuments, church towers, vernacular villages, country houses, mansions, or other historic features increases susceptibility. High voltage electricity infrastructure can detract from or conflict with the landscape setting of these features.
 - Skylines that provide a prominent setting for settlements are also more susceptible. High voltage electricity infrastructure can disrupt the relationship

between these settlements and their landscape settings, affecting the visual coherence and setting of the area.

v. Settlement Pattern

- This relates to settlement pattern in relation to landscape character, rather than to visibility and views, which is discussed separately.
- A settlement pattern that is closely integrated with the pattern and form of the landscape, especially where traditional patterns remain intact, is likely to be more susceptible to high voltage electricity infrastructure. This is because its presence can disrupt the visual harmony between the settlements and their surrounding landscape.
- Conversely, a settlement pattern that is less closely related to the landscape, such as larger settlements that extend over ridgelines or obscure field patterns, is generally less susceptible. This is because existing development may already have altered the natural landscape, reducing the potential impact of infrastructure.

2.4.33 Designated landscapes are typically highly susceptible to new development of the type proposed. This susceptibility is influenced by the special qualities and purposes of designation, as well as the valued elements, qualities, or characteristics of the landscape. The degree to which these aspects may be unduly affected by the Project is a key consideration in assessing the overall impact.

2.4.34 The susceptibility of the landscape to change is categorised as very high, high, medium, or low by applying the indicators listed in **Table 2.4**. Judgements are supported by narrative description linked back to evidence from the baseline study to explain the conclusions reached.

Table 2.4 Indicators of landscape receptor susceptibility

Category	Indicators
Very High	The landscape receptor is very highly susceptible in that it is unable to accommodate the Project without substantial adverse effects. Attributes that make up the character of the landscape offer almost no opportunities for accommodating the change without its key characteristics and landscape elements being fundamentally altered or permanently lost, leading to a different landscape character.
High	The landscape receptor is highly susceptible in that it is more or less unable to accommodate the Project without adverse effects. Attributes that make up the character of the landscape offer very limited opportunities for accommodating the change without its key characteristics being fundamentally altered, leading to a different landscape character.
Medium	The landscape receptor has some ability to accommodate the Project without adverse effects. Attributes that make up the character of the landscape offer some opportunities for accommodating the change without key characteristics being fundamentally altered.
Low	The landscape receptor is more able to accommodate the Project without adverse effects. Attributes that make up the character of the landscape are more resilient to being changed by the type of development proposed. Only individual

Category	Indicators
	elements and/or features, or a particular aesthetic and perceptual aspect may be affected.
2.4.35	In accordance with paragraph 5.5 of GLVIA3 (Ref 2) and note 5(9) of the Notes and Clarifications (Ref 3), judgements on landscape value and susceptibility are not combined to arrive at a judgement on sensitivity but will separately influence the assessment as part of the overall profile approach which is explained later in this appendix.
	Predicting Magnitude of Change
2.4.36	Paragraph 5.48 of GLVIA3 (Ref 2) sets out the criteria which should be considered in reaching a professional judgement on the magnitude of landscape change. These include <i>“its size or scale, the geographical extent of the area influenced, and its duration and reversibility”</i> .
2.4.37	The overall judgement on magnitude of change is determined by carefully evaluating professional judgements against these criteria.
	Size and Scale of Effect
2.4.38	Paragraph 5.49 of GLVIA3 (Ref 2) notes that judgements about the size or scale of effect on the landscape <i>“should be described and categorised on a verbal scale that distinguishes the amount of change but is not overly prescriptive. The judgements should for example take account of:</i>
	<ul style="list-style-type: none"> <i>i. The extent of the existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape – in some cases this may be quantified;</i> <i>ii. The degree to which the aesthetic or perceptual aspects of landscape are altered either by removal of existing components of the landscape or by addition of new ones – for example, removal of hedges may change a small-scale intimate landscape into a large-scale, open one, or introduction of buildings or tall structures may alter open skylines; and</i> <i>iii. Whether the effect changes the key characteristics of the landscape, which are critical to its distinctive character”.</i>
2.4.39	The size/scale of effect is described as large, medium, small or very small. Judgements are supported by narrative description linked back to the considerations above.
	Geographical Extent
2.4.40	The geographical extent over which the landscape effect would arise is described as large, medium or small based on the definitions set out on page 91 of GLVIA3 (Ref 2) and the published landscape character areas/types:
	<ul style="list-style-type: none"> <i>i. Small - the site level or its immediate setting;</i> <i>ii. Medium - the scale of the landscape; type/character area within which the Project lies; and</i>

- iii. Large - influencing several landscape character types/areas.

Duration and Reversibility

- 2.4.41 Paragraph 5.51 of GLVIA3 states that duration “*can usually be simply judged on a scale such as short term, medium term or long term*”. For the purposes of the assessment, duration is determined in relation to the phases of the Project, as follows:
- i. Short term – assumed to cover construction plus one-year reinstatement.
 - ii. Medium term – assumed to be 2 to 15 years post construction and include the effects of permanent vegetation loss on the baseline environment.
 - iii. Long term – assumed to be of a duration that extends longer than 15 years post construction when any committed mitigation planting will be established and has achieved its design intention.
- 2.4.42 The duration of the effect can also be described as transient (whether continuous or intermittent) or seasonal (views which would be subject to seasonal leaf cover).
- 2.4.43 In accordance with the principles in GLVIA3 (Ref 2), reversibility is reported as reversible or irreversible (i.e. permanent) and is related to whether the change can be reversed at the end of the phase of development under consideration (i.e. at the end of construction or at the end of the operational lifespan of the development).
- 2.4.44 Although unlikely for practical system operational reasons, the decommissioning and removal of the proposed 400 kV overhead line and the substations is possible. However, for the purposes of the assessment all landscape and visual effects associated with the Project’s operation are deemed to be irreversible (permanent) due to the operational lifetime of the infrastructure and long-term network requirements.

Making Judgements on Magnitude of Change

- 2.4.45 The magnitude of landscape change is categorised as large, medium, small or very small by applying the indicators listed in **Table 2.5**. Judgements are supported by narrative description linked back to evidence from the baseline study to explain the conclusions reached.

Table 2.5 Indicators of magnitude of landscape change

Category	Indicators
Large	The Project (or works to facilitate it) would result in a considerable change to the landscape, with undesirable consequences for the elements, character and quality of the baseline landscape. The Project would form a prominent landscape element and post development the baseline situation would be substantially changed. Physical loss of landscape features that are not replaceable or are replaceable only in the long term. The duration/reversibility of effect is likely to be long-term and irreversible.
Medium	The Project (or works to facilitate it) would result in a noticeable change to the landscape over a wide area or conspicuous change over a limited area, with some undesirable consequences for the elements, character and quality of the baseline landscape. The Project would form a conspicuous landscape element

Category	Indicators
	and post development the baseline situation may be noticeably changed. Physical loss of landscape features that are replaceable in the medium term. The duration/reversibility of effect is likely to be long-term but may be reversible.
Small	The Project (or works to facilitate it) would result in a slight change to the landscape with few undesirable consequences for the elements, character and quality of the baseline landscape. The Project would be perceptible but, post development, the baseline landscape may exhibit some differences but would be largely unchanged. Physical loss of landscape features that are replaceable in the medium term. The duration/reversibility of effect is likely to be medium-term and reversible.
Very Small	The Project (or works to facilitate it) would result in an inconspicuous change to the landscape over a wide area or slight change over a limited area, with no undesirable consequences for elements, character and quality of the baseline landscape. The Project would be just perceptible and post development, the baseline landscape would appear unchanged. Physical loss of landscape features that are replaceable in the short term. The duration/reversibility of effect is likely to be short-term and reversible.

2.4.46 The assessment also identifies areas where no landscape change is anticipated. In these instances, 'no change' is inserted into the appropriate magnitude of effect column and the resulting effect is identified as 'no effect'.

Judging Levels of Landscape Effect

2.4.47 The final step in the assessment involves combining judgements on sensitivity and magnitude of effect to arrive at an informed, professional evaluation of the significance of each landscape effect.

2.4.48 In accordance with paragraph 5.55 of GLVIA3 (Ref 2), the evaluations of the individual aspects set out above (susceptibility, value, size and scale, geographical extent, duration and reversibility) are considered together to provide an overall profile of each identified landscape effect. An overview is then taken of the distribution of judgements for each criterion to make an informed professional assessment of the overall level of effect, drawing on good practice guidance provided in GLVIA3 (Ref 2) and guided by the indicative criteria set out in **Table 2.6**. This determination relies on the application of professional judgment and expertise to account for the many variables involved, each of which is weighted differently based on the specific characteristics of the site and location in each case.

2.4.49 A rigid matrix-type approach, where the level of landscape effect is defined simply based on the level of sensitivity combined with the magnitude of effect is not used. As such, the conclusion on the level of effect is not always the same for similar receptors. Rather, consideration of the relative importance of each aspect informs the overall decision.

2.4.50 Levels of effect are categorised as major, moderate, minor or negligible, with moderate and major effects deemed significant under the EIA Regulations.

- 2.4.51 A preliminary assessment of effects is presented within **Supplementary PEI Report Volume 2 Part B Chapter 2 Landscape**. Further detail and justification will be provided in the Visual chapter and accompanying appendices of the ES.
- 2.4.52 As further assessment work is still to be conducted, the preliminary assessment presented in the Supplementary PEI Report only determines whether an effect is considered significant or not, in accordance with the indicators outlined in **Table 2.6**. In the full assessment presented in the ES, there will also be judgements on whether an effect is likely to be of moderate or major significance.
- 2.4.53 Where an effect is reported in this Supplementary PEI Report it is an adverse effect unless stated otherwise.

Table 2.6 Categories and indicators of significance

Category	Definition	Significant effect
Major	<p>The Project will lead to an obvious alteration in landscape characteristics and character, likely affecting a landscape with high or medium susceptibility to that type of change.</p> <p>This level of significance may also occur when a medium scale of effect acts on an internationally or nationally valued landscape.</p> <p>The effect is likely to be long-term and affect a relatively large area.</p> <p>If designated, it is likely to affect the reasons for the designation.</p>	Yes
Moderate	<p>The Project will lead to a noticeable alteration in landscape characteristics and character, likely affecting a landscape with a medium susceptibility to that type of change.</p> <p>This level of effect may also occur when a smaller scale of effect acts on a more widely valued landscape, or a larger scale of effect acting on a landscape valued at a more local level.</p> <p>This level of effect may also occur when a large scale of effect occurs over a relatively short period or over a small area.</p> <p>If designated, it may affect the reasons for the designation.</p>	Yes
Minor	<p>The Project will result in a small alteration in landscape characteristics and character over a long-term duration.</p> <p>This level of effect may also occur when a larger scale of effect is of short-term duration or confined to the site.</p> <p>If designated, it would not affect the reasons for the designation.</p>	No
Negligible	<p>The Project will result in a barely perceptible alteration in landscape characteristics and character.</p> <p>If designated, it would not affect the reasons for the designation.</p>	No

- 2.4.54 The preliminary assessment considers the effects at construction and Year 1. The assessment presented in the ES considers the effects at construction, year 1

operation, and year 15 operation (by which time any new planting will be established and fulfilling its intended function).

Mitigation

- 2.4.55 The design is being developed iteratively with the assessment process. This means that all potentially significant adverse effects that can be avoided or reduced are being designed out where possible.
- 2.4.56 The most effective mitigation measures are ones which are integral to the Project. A distinction will therefore be made between measures designed as an intrinsic part of the Project (primary or embedded measures) and those which are intended to specifically counteract any residual negative effects of the Project (secondary measures).
- 2.4.57 The final step, in the detailed assessment presented in the ES, is to summarise the likely significant landscape effects remaining following mitigation.
- 2.4.58 Significance is categorised as major, moderate, minor, or negligible. As noted previously, unless otherwise stated, all identified effects are considered adverse.
- 2.4.59 Each of the significance categories covers a broad range of effects and represents a continuum or sliding scale. Where an effect falls at the upper or lower end of the category, this will be noted and explained as part of the detailed assessment presented in the Landscape chapter of the ES.

2.5 Technical Information

General Site Photography

- 2.5.1 Baseline photographs are taken using a Canon EOS digital SLR with a full frame sensor (36 x 24 mm) using a 50 mm equivalent fixed focal length lens. Photographs are taken in accordance with best practice guidance, including the Landscape Institute's TGN 06/19 (Ref 6), and their location recorded using an on-site handheld GPS (Type 3 LI TGN 06/19) (Ref 6). Where required, the resulting images will be stitched together using specialist PTGui software to create 90° panoramic baseline views. The time at which the photographs are taken, and the prevailing weather conditions, will be recorded for each viewpoint. For general site photography, 360° panoramas will be taken, unless there are privacy concerns related to nearby properties.
- 2.5.2 Photographs are undertaken in winter and in clear lighting conditions.

Zone of Theoretical Visibility

- 2.5.3 To help identify the areas from which the proposed 400 kV overhead line would be visible, a preliminary ZTV map has been prepared for the Project. ZTV maps are essential for refining the Study Area and assessing the potential landscape effects of the project. While the ZTV maps show theoretical visibility, actual visibility might be reduced in areas with extensive vegetation. Therefore, professional judgment is used to focus on areas with the most significant potential landscape impacts.
- 2.5.4 Although significant effects beyond 5 km are unlikely, the 10 km cut-off for the ZTV is used to:

- i. assess cumulative visual impacts with other developments; and
 - ii. identify effects on distant but very sensitive receptors.
- 2.5.5 ZTV maps are created using recent topographic data and assume an eye level of 1.6m (representing an average-height person). The accuracy of the maps is verified on-site following guidance from TGN 06/19 (Ref 6). This approach ensures that the potential visual impact of the project is assessed comprehensively and in line with professional standards.
- 2.5.6 ZTV maps take account of the following factors:
- i. the existing topography using OS terrain 50 data;
 - ii. existing buildings by applying a 8 m average height to the OS Mastermap layer; and
 - iii. existing woodland cover by applying a 15 m average height to the National Forest Inventory which is produced by the Forestry Commission and records all forests and woodlands with an area of 0.5 ha and over.
- 2.5.7 Individual and small groups of trees are excluded as, during winter, these will provide only minimal screening of the Project.

2.6 Assessment Assumptions and Limitations

- 2.6.1 The following limitations and assumptions have been identified for the landscape assessment:
- i. All baseline surveys have been conducted on publicly accessible land. If access is not possible from publicly accessible areas, professional judgement has been used to estimate and document the likely effects;
 - ii. Detailed arboricultural information will not be available until the ES stage. For the preliminary assessment, professional judgement has been applied to determine the effects of woodland loss on the landscape;
 - iii. A draft Zone of Theoretical Visibility (ZTV) map has been produced to inform the definition of the Study Area and the selection of representative viewpoints and is shown on **Supplementary PEI Report Volume 2 Part B Figure 3.2 Zone of Theoretical Visibility** and June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Figure 3.2 Zone of Theoretical Visibility (ZTV) (Ref 1).. This illustrates the theoretical visibility of the proposed 400 kV overhead line and substations up to 10 km during the operational phase;
 - iv. The preliminary assessment assumes that vegetation removed during construction would be reinstated, except where there are planting restrictions associated with requirements to maintain the required safety clearance. Vegetation clearance assumptions are set out in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**;
 - v. The ES will provide final details of design, control and mitigation measures, which will be informed by the findings of the previously published June 2025 PEI Report, the Supplementary PEI Report and statutory consultation and which will have been considered during the assessment;

- vi. The general approach taken to determining the significance of effect in this preliminary assessment is only to state whether effects are likely or unlikely to be significant, rather than assigning significance levels, which will be undertaken at the ES stage;
- vii. For completeness and to provide further context to the assessment, the relevant National Landscape Character Areas (NCA) as defined by Natural England (Ref 10) are listed in the baseline. This is to ensure that the potential for significant effects at a wider level than district level is understood, given the length of the route and geographical coverage of the Project. An assessment of the effects of the Project on the NCAs will be provided in the project-wide assessment of landscape effects presented in the ES once the assessments of the more detailed regional and local landscape types have been completed;
- viii. Judgements regarding the value and susceptibility of each landscape receptor are detailed in **Supplementary PEI Report Volume 3 Part B Appendix 2A Landscape Character Baseline**, while the assessment of whether the effects on each landscape receptor are likely to be significant are presented in **Supplementary PEI Report Volume 2 Part B Chapter 2 Landscape** and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 (Ref 1); and
- ix. There are very few Neighbourhood Plans and Village Design Statements for parishes within the Study Area, although the Levelling-up and Regeneration Act 2023 (the LURA) (Ref 17) may mean that more are in preparation. They have not therefore been considered at this preliminary assessment stage but will be reviewed and used to inform the assessment presented in the Landscape chapter of the ES.

2.6.2 These key parameters and assumptions will be reviewed based on the design presented in the DCO application and, where necessary, updated or refined for the ES. The ES will present the final key limitations and assumptions used within that assessment, drawing particular attention to any areas that may have changed from that presented in this preliminary assessment.

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3. Visual

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3. Visual

3.1 Overview

- 3.1.1 This Appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary visual assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects. The visual assessment considers the changes to specific views and general visual amenity experienced by people (visual receptors).
- 3.1.2 Landscape and visual assessments are inter-related. Visual effects can be considered independently of the effects on the landscape in which it is seen, but landscape effects require consideration of the visual effects of the Project.

3.2 Guidance Specific to Visual Assessment

- 3.2.1 In accordance with the approach to the Environmental Impact Assessment (EIA) outlined in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**, the visual assessment, cumulative visual assessment and presentation of visual effects adhere to relevant legislation and standards. The assessment also follows the applicable guidelines including:
- i. Guidelines for Landscape and Visual Impact Assessment – 3rd Edition (GLVIA3) (Ref 2);
 - ii. Technical Guidance Note (TGN) 01/24 Notes and Clarifications on aspects of the 3rd Edition Guidelines on Landscape and Visual Impact Assessment (GLVIA3) (Ref 3);
 - iii. Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals (Ref 4);
 - iv. Technical Guidance Note (TGN) 02/19 Residential Visual Amenity Assessment (Ref 5);
 - v. Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment, 2024 (Ref 6); and
 - vi. Data Sources.
- 3.2.2 The following data has been used to inform the baseline conditions:
- i. Ordnance Survey (OS) 1:10,000, 1:25,000, 1:50,000 and 1:250,000 base mapping;
 - ii. OS Terrain® 50 mid-resolution and LIDAR Composite 2017 – 50 cm Digital Terrain Model (DTM);
 - iii. Google Earth Pro aerial photography, and Google Maps Street View;

- iv. Base mapping from ArcGIS Map Service;
- v. Open source Geographic Information System (GIS) data;
- vi. Local authority Local Plans and Core Strategies; and
- vii. Site survey carried out during several visits under differing weather conditions between spring 2023 and summer 2024.

3.3 Approach to Visual Assessment

Scope of Assessment

- 3.3.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 7) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 8). The scope has also been informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Visual chapters is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 3.3.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 9). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 3.3.3 **Table 3.1** identifies the receptors that are scoped in or out of the visual assessment. Those that are scoped out, reflect the position in the Scoping Opinion (Ref 7).

Table 3.1 Scope of Visual assessment

Receptor	Project phase(s)	Scoped in or out
Receptors outside the ZTV	Construction, operation and maintenance	Scoped out
Key views to and from the Lincolnshire Wolds National Landscape (AONB)	Construction and operation	Scoped in
	Maintenance	Scoped out
People living and moving around communities and engaging in recreational activities, including people using Public Rights of Way (PRoW) and recreational users of waterways.	Construction and operation	Scoped in
	Maintenance	Scoped out
People using National Trails and regionally promoted routes.	Construction and operation	Scoped in
People living and moving around communities and engaging in recreational activities, including people using PRoW and recreational users of waterways (beyond 3 km of the Project).	Construction and operation	Scoped in

Receptor	Project phase(s)	Scoped in or out
People using National Trails and regionally promoted routes (beyond 3 km of the Project).	Construction and operation	Scoped in
Occupants of individual selected properties within 400 m (assessed under RVAA guidelines).	Operation	Scoped in (assessment to be reported in the ES)
	Construction and maintenance	Scoped out
People using the main road network and rail travellers.	Construction, operation and maintenance	Scoped out
People at their place of work whose attention is on their surroundings and where the setting is important to their quality of working life.	Construction and operation	Scoped in
	Maintenance	Scoped out
People at protected viewpoints, panoramas and viewing corridors.	Construction and operation	Scoped in
	Maintenance	Scoped out
People experiencing effects from night-time lighting.	Construction and operation	Scoped in
	Maintenance	Scoped out
People experiencing changes to their view from localised widening of public highways.	Construction	Scoped in
	Operation and maintenance	Scoped out
People experiencing changes to their view from periodic vehicle/helicopter/drone access for routine maintenance and emergency repairs.	Maintenance	Scoped out
People experiencing changes to their view from general maintenance activities including cutting back of vegetation along wayleave corridor to ensure safety clearances.	Maintenance	Scoped out

Study Area

- 3.3.4 The ZTV map, which incorporates screening elements such as buildings and woodland, is presented in **Supplementary PEI Report Volume 2 Part B Figure 3.2 Zone of Theoretical Visibility (ZTV)** and June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Figure 3.2 Zone of Theoretical Visibility (ZTV) (Ref 1). Based on pylon locations provided by design engineers, the ZTV identifies areas where the proposed 400 kV overhead line may theoretically be visible. It also helps determine the extent of the Study Area for the Visual assessment. The theoretical visibility of individual pylons is limited to a maximum distance of 10 km, as beyond this distance the pylons would be almost imperceptible.

- 3.3.5 The Study Area for the preliminary Visual assessment (based on the same approach which will be adopted when defining the EIA Study Area) extends 5 km from the Limits of Deviation (LoD) for the new 400 kV overhead line¹. This distance was informed by the ZTV, the scale and appearance of the pylons (as detailed in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**), field survey and professional judgment, and is considered sufficient to capture the likely significant landscape effects of the Project. Although the ZTV indicates potential visibility beyond 5 km in certain directions, based on experience of similar schemes, significant landscape impacts are highly unlikely to arise beyond this distance.
- 3.3.6 To ensure that all likely significant effects are captured in the assessment, the extent of the Study Area will continue to be reviewed in the light of feedback received during statutory consultation, ongoing site surveys, and following the production of updated ZTVs as the Project develops.

Approach to Defining the Study Area

- 3.3.7 The Study Area was informed by guidance on the perceived height of pylons when seen at varying distances (Ref 12). This study used a mathematical model to calculate the apparent height of a pylon when its true height and distance from a viewer are known.
- 3.3.8 The apparent height of a pylon is defined as the height that the structure would appear at arm’s length (61 cm) from the viewer (i.e. the structure would appear to be the same height as an X-cm high object held at arm’s length (61 cm) from the viewer).
- 3.3.9 The height of the individual pylons proposed for the Project are set out in **Supplementary PEI Report Volume 2 Part B Chapter 1 Overview of the Section and Description of the Project** and June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Chapter 1 Overview of the Section and Description of the Project (Ref 1). On average they are approximately 50 m tall. Using the above calculation the apparent height of a 50 m tall pylon was calculated for varying distances from a viewpoint. The results are shown in **Table 3.2**.

Table 3.2 Apparent height of 50 m structure when viewed at arm’s length

Distance	Apparent Height
100 m	30.50 cm
200 m	15.25 cm
300 m	10.16 cm
400 m	7.63 cm
500 m	6.10 cm
1000 m	3.05 cm
2000 m	1.53 cm

¹ The Study Area for the preliminary assessment is measured from the LoD as significant effects are most likely to result from construction and operation of the new substations and 400 kV overhead line rather than the temporary access tracks, which in some instances could extend several kilometres from the draft Order Limits but are unlikely to result in significant effects.

Distance	Apparent Height
5000 m	0.61 cm
10000 m	0.31 cm

- 3.3.10 At 5 km, which is the extent of the Study Area for the visual assessment, the apparent height of a 50 m high pylon is 0.61cm. At this apparent height, the pylons are highly unlikely to have a significant visual effect.
- 3.3.11 At 10 km, which is the extent of the Study Area for the cumulative visual assessment, the apparent height of 50 m high pylon is 0.31cm. At this apparent height the pylons alone would not give rise to significant visual effects but when seen alongside another development, the overall effect of both projects may be considered significant.

The Study Area

- 3.3.12 The Study Area for the preliminary Visual assessment is shown on **Supplementary PEI Report Volume 2 Part B Figure 2.1 Landscape Designations and Features** and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Figure 2.1 Landscape Designations and Features (Ref 1).. The extent of the Study Area for the preliminary Landscape assessment (based on the same approach which will be adopted when defining the EIA Study Area), extends 5 km from the Limits of Deviation (LoD) for the new 400 kV overhead line²]. This distance was informed by the ZTV, the scale and appearance of the pylons (as detailed in Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description), field survey and professional judgment, and is considered sufficient to capture the likely significant landscape effects of the Project. Although the ZTV indicates potential visibility beyond 5 km in certain directions, based on previous experience of similar schemes, significant landscape impacts are highly unlikely to arise beyond this distance.
- 3.3.13 The preliminary cumulative Visual assessment Study Area extends 10 km from the LoD for the new 400 kV overhead line. This radius was established to evaluate potential cumulative visual impacts in conjunction with other existing, consented, and/or proposed developments.

Assessment Methodology

Definition of Visual Receptors

- 3.3.14 Visual receptors are individuals or groups of people who may be affected by changes in their views and visual amenity. As noted in paragraph 6.31 - 6.32 of GLVIA3 (Ref 2), they are usually grouped by their occupation or activity (e.g. residents, motorists, recreational users, tourists visiting a specific location or area) and the extent to which their attention is focused on the view.

² The Study Area for the preliminary assessment is measured from the LoD for the new 400 kV overhead line as significant effects are most likely to result from construction and operation of the new substations and 400 kV overhead line rather than the temporary access tracks, which in some instances could extend several kilometres from the draft Order Limits but are unlikely to result in significant effects.

- 3.3.15 In accordance with GLVIA3, the assessment focuses on the public views of those groups of people who are most likely to be susceptible to change and, therefore, are most likely to experience significant effects from the Project.
- 3.3.16 The assessment includes the following receptor groups, which have the potential to experience significant effects due to visual change arising from the Project:
- i. Communities - People living in and moving around communities, working within communities where the setting is important to their quality of work and engaging in recreational activities, including people using Public Rights of Way (PRoW) and recreational users of waterways; and
 - ii. Recreational Routes and Receptors - People using National Trails and regionally promoted routes, long distance cycle route, people at protected viewpoints, panoramas and viewing corridors and people visiting tourist attractions where views are important to the experience.
- 3.3.17 The preliminary assessments of effects on visual receptors are presented in **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 3 Visual** and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 3 Visual (Ref 1).

Assessing Visual Effects

- 3.3.18 The methodology used for conducting the visual assessment builds upon the general assessment methodology outlined in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**. This ensures that the visual assessment follows a consistent and structured approach in line with the overall EIA methodology.
- 3.3.19 The methodology draws on guidance in GLVIA3 (Ref 2) and its associated Notes and Clarifications (Ref 3). This is the established good practice guidance for visual assessment and complies with the requirements of EN-1 (Ref 10) and EN-5 (Ref 11).
- 3.3.20 The GLVIA3 (Ref 2) approach to assessing visual effects is summarised as follows:
- i. Identify a Study Area - this is the geographical area where potential visual effects from the Project could be experienced;
 - ii. Establish baseline conditions - this involves desk studies and field surveys to evaluate the current visual conditions across the Study Area;
 - iii. The baseline includes the identification of visual receptors and an appraisal of existing views and visual amenity across the Study Area. Determine visual receptor sensitivity - this involves making separate judgements on the relative value of the view and the susceptibility of the visual receptors to changes introduced by the Project;
 - iv. Assess effects on visual receptors - effects are evaluated based on their size/scale, duration and reversibility and geographical extent. This analysis helps determine the magnitude of change likely to occur; and
 - v. Apply professional judgement - an overall judgment on the significance of effects is made by weighing the value of the view and susceptibility of the visual receptors with the magnitude of the anticipated change introduced by the Project.
- 3.3.21 This structured process allows for a comprehensive evaluation of how views would be affected by the Project and whether the changes are likely to be significant.

Baseline Data Gathering

- 3.3.22 The visual baseline provided in **Supplementary PEI Report Volume 3 Part B Section 5 Appendix 3B Visual Baseline** provides an overview of the visual baseline, an explanation of the viewpoint selection and initial baseline information for the Community Areas (parishes) within the Study Area. The viewpoint baseline provided in **Supplementary PEI Report Volume 3 Part B Appendix 3A Viewpoint Selection Document** provides a preliminary description of the view at each representative viewpoint location and includes a judgement on the value of the view as well as on the susceptibility of the receptors at that location.
- 3.3.23 The visual baseline establishes the general area from which the Project may be visible, in accordance with GLVIA3 Page 32, para. 3.15, which states that “*the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and the visual amenity at those points*”. It also makes preliminary judgements on the value attached to each Community Area and its susceptibility to change arising from the Project.
- 3.3.24 Changes in views may be experienced by people at different locations within the study area, including from static locations (normally assessed using representative viewpoints) and whilst moving through the landscape (normally referred to as sequential views, e.g. from roads and footpaths).
- 3.3.25 The baseline describes the current visual conditions across the Study Area. Recognising that landscapes are dynamic, potential future changes independent of the Project are also considered, although these do not form the basis of the assessment. The baseline is established using published landscape character assessments, Neighbourhood Plans and Village Design Statements (where available) and site surveys to understand the current character and quality of the views and the visual receptors likely to be affected by the Project.

Viewpoint Selection

- 3.3.26 Visual effects are reported by reference to communities which are based on the jurisdictional boundaries of parishes across the Study Area. Representative viewpoints illustrate the views experienced by people within these communities. Viewpoint selection was informed by desktop analysis, consultation feedback, and site surveys. The aim is not to capture every potential view of the Project but to represent a range of receptors at varying distances, enabling a thorough assessment of its effects. GLVIA 3 (Ref 2) on page 109, paragraph 6.19 notes that viewpoints can be representative, specific, or illustrative:
- i. *‘representative viewpoints, selected to represent the experience of different types of visual receptor, where larger numbers of viewpoints cannot all be included individually and where the significant effects are unlikely to differ – for example, certain points may be chosen to represent the views of users of selected public footpaths and bridleways;*
 - ii. *specific viewpoints, chosen because they are key and sometimes promoted viewpoints within the landscape, including for example specific local visitor attractions, viewpoints in areas of particularly noteworthy visual and/or recreational amenity such as landscapes with statutory landscape designations, or viewpoints with particular cultural landscape associations; and*

- iii. *illustrative viewpoints, chosen specifically to demonstrate a particular effect or specific issues, which might, for example, be the restricted visibility at certain locations’.*

- 3.3.27 It is intended that these viewpoints will be those assessed and presented in the ES, although subject to consultation, there may be some alterations to the precise location and direction of view. Additional viewpoints may also be added in response to feedback from local planning authorities and key stakeholders, including Natural England.
- 3.3.28 Each viewpoint has been visited and 360-degree photography from each of the viewpoints undertaken in accordance with (TGN) 06/19 (Ref 4) to illustrate the existing characteristics of the view. These characteristics are detailed in the baseline description presented in **Supplementary PEI Report Volume 3 Part B Appendix 3B Proposed Viewpoints**.
- 3.3.29 It should be emphasised that it is the people who would be experiencing the view from the viewpoint that are the receptor, not the viewpoint itself. The location affords the view to the recipient, and whilst the location cannot change, the opinion of the viewer can vary as people will generally have different responses to a change in view depending on their location, the activity they are engaged in and other factors, including the weather and the time of day/year.

Assessment of Effects on Visual Receptors

- 3.3.30 GLVIA3 (Ref 2) states that the sensitivity of visual receptors should be assessed in terms of their susceptibility to changes to their views and the value attached to those views, and that magnitude of change should be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect.
- 3.3.31 These aspects are considered together, to form a judgement on the overall significance of visual effect. The remainder of this appendix sets out the methodology in more detail.

Establishing Landscape Sensitivity

Value of the View

- 3.3.32 The baseline includes a description of the relative value of the view experienced at each viewpoint location and is unrelated to the nature of the Project.
- 3.3.33 GLVIA3 (Ref 2) at page 114, paragraph 6.37, explains that the value of a view depends on:
- i. *“recognition of the value attached to particular views, for example in relation to heritage assets, or through planning designations; and*
 - ii. *indicators of the value attached by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment... and references to them in literature or art...”*
- 3.3.34 The value of a view also depends on the character and quality of the view experienced, which has been identified for each viewpoint through desktop and field survey and described in the baseline description for each viewpoint.

- 3.3.35 The viewpoint analysis has involved visiting each viewpoint location, but further visits will be undertaken to inform the detailed assessment which will be presented in the ES. To best represent the visibility of the Project, photographs illustrating the views will, where possible, be taken during fine weather conditions to ensure optimal clarity and accuracy.
- 3.3.36 The value of the view is categorised as very high, high, medium, or low by applying the indicators listed in **Table 3.3**. Judgements are supported by narrative description linked back to evidence from the baseline study to explain the conclusions reached.

Table 3.3 Indicators of view value

Category	Indicators
Very High	Iconic view of national or international importance, or a view which is associated with a nationally or internationally designated landscape or heritage asset, the cultural associations of which are widely recognised in art, literature, or other media.
High	Highly scenic view associated with a landscape or heritage asset of national or regional importance, the cultural associations of which are regularly recognised in art, literature, or other media.
Medium	The value of such views may have been identified as part of the consultation process and through site visits. Elements or features within the view are likely to be in good condition, with few discordant elements or features.
Low	Although the view may be valuable to the local community, the location has no formal planning status, is in an area of ordinary landscape value with some discordant elements or features. The value of such views to the local community may have been identified as part of the consultation process and through site visits.

- 3.3.37 Care has been taken to ensure that views across flat fenland and similar open landscapes are appropriately considered when assessing the value of the view. Although these landscapes are flat and relatively featureless, their openness and simplicity are often attractive and valued characteristics.
- Susceptibility of Visual Receptors
- 3.3.38 As explained in paragraph 6.32 of GLVIA3 (Ref 2), the susceptibility of visual receptors to changes in views is a function of the occupation or activity of people experiencing the view and the degree to which their attention or interest may, therefore be focused on the view. It is determined through informed professional judgement, guided by the indicators set out in Table 3.4. Susceptibility is categorised as very high, high, medium, or low and supported by narrative description linked back to evidence from the baseline study to explain the conclusions reached.

Table 3.4 Indicators of visual receptor susceptibility

Category	Indicators
Very High	<p>People visiting locations purely to experience the view and where there is typically a prolonged viewing opportunity. Examples include:</p> <ul style="list-style-type: none"> • People living and moving around communities where the views are widely recognised as being of the outstanding scenic quality (typically within or to a nationally designated landscape); • People engaged in outdoor recreation where the views are of the highest scenic quality (including views from nationally designated or regionally promoted trails and panoramic viewpoints – often marked on OS plans and providing interpretation facilities); and • Visitors to heritage assets or other tourist and visitor attractions where the views are of the highest scenic quality and make an important contribution to the experience.
High	<p>People whose attention or interest is likely to be focused on the view and where there is typically a prolonged viewing opportunity. Examples include:</p> <ul style="list-style-type: none"> • People living and moving around communities where views contribute to the landscape setting enjoyed by residents; • People engaged in outdoor recreation (including public rights of way) whose interest is likely to be focused on the landscape; • Visitors to heritage assets where views of the surrounding landscape make an important contribution to the experience; and • People travelling on scenic and tourist routes, where attention is focused on the surrounding landscape.
Medium	<p>People whose attention or interest may partially be on the appreciation of their surroundings. Examples include:</p> <ul style="list-style-type: none"> • People living and moving around communities where views are incidental and generally not the focus of attention; • People travelling on local roads who may have some interest in their surroundings, but the view is transitory; • People at their place of work whose attention is on their surroundings and where the setting is important to their quality of working life; and • People taking part in outdoor sport or recreation which does not involve appreciation of the view.
Low	<p>People whose attention or focus is on other activities, not on their surroundings. Examples include:</p> <ul style="list-style-type: none"> • Travellers on major road or rail routes, which are not scenic or tourist routes and where the view is typically experienced at speed; • People at their place of work whose attention is not on their surroundings and where setting is not important to their quality of working life; and • People taking part in outdoor sport or recreation which does not involve appreciation of the view.

- 3.3.39 Paragraph 6.35 of GLVIA3 (Ref 2) notes that *“these divisions are not black and white and in reality, there will be gradation in susceptibility to change. Each project needs to consider the nature of the groups of people who will be affected and the extent to which their attention is likely to be focused on views and visual amenity”*.
- 3.3.40 Views at certain locations may be experienced by multiple receptor types, such as a viewpoint along a footpath near residential properties. Each receptor type will perceive the view differently and have varying susceptibility to change. In these cases, the overall susceptibility of the receptor group is determined by those with the highest susceptibility to change.
- 3.3.41 In accordance with paragraph 5.5 of GLVIA3 (Ref 2) and note 5(9) of the Notes and Clarifications (Ref 3), judgements on view value and visual receptors’ susceptibility are not combined to arrive at a judgement on sensitivity but will separately influence the assessment as part of the overall profile approach which is explained later in this appendix.

Predicting Magnitude of Change

- 3.3.42 Paragraph 6.38 of GLVIA3 (Ref 2) sets out the criteria which should be considered in reaching a professional judgement on the magnitude of visual change. These include *“its size or scale, the geographical extent of the area influenced, and its duration and reversibility”*.
- 3.3.43 The overall judgement on magnitude of change is determined by carefully evaluating professional judgements against these criteria.

Size/scale of Effect

- 3.3.44 The size and scale of a visual change is assessed using professional judgement as large, medium, small or very small depending on:
- The composition of the view with respect to the loss or addition of features in the view, including the nature of the view (full, partial, glimpsed) and the proportion of the view occupied by the Project.
 - The distance of the viewpoint from the Project and how this affects its prominence.
 - The degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour, and texture.
 - The presence of landform, buildings or vegetation (including seasonal effects due to variations in deciduous leaf cover) which may wholly or partly obstruct views of the Project, allowing only partial or glimpsed views.
 - The duration and nature of the visual effect. This can depend on the speed of travel which affects how long a view will be experienced (continuously, intermittently, glimpsed either once or repeatedly and sequentially along a route) and the possibility that a development will be noticed.
 - The background against which the Project is viewed (often referred to as ‘backclothing’) as this can affect the degree of contrast and scale. For example, pylons, conductors, and other electricity infrastructure are more difficult to discern when viewed against a textured background such as landform or vegetation than against an open sky background.

- 3.3.45 Other considerations, which can influence the magnitude of visual change include the level of activity in a scene, presence of noise or lighting, traffic movement, peoples' likely preferences and expectations, character and quality of the existing view (inevitably a point of judgement), nature of the scene (open and directionless, or visually contained by enclosing features) and any other elements that affect human perception.
- 3.3.46 Wireline visualisations will be prepared for each viewpoint to illustrate where the new infrastructure would appear in a view, and a selection of viewpoints will be illustrated with photomontage visualisations to provide a photorealistic illustration of the likely changes to a selection of views. These will be presented in the visual chapter of the ES.

Geographical Extent of Effect

- 3.3.47 Geographical extent in the context of visual assessment refers to the area over which changes would be noticeable, for example whether the Project is visible from a single location or represents a larger area with similar views. It also considers whether the changes to the view would be experienced continuously or intermittently.
- 3.3.48 Geographical extent is described as large (widespread), medium, or small (localised).

Duration and Reversibility

- 3.3.49 Paragraph 5.51 of GLVIA3 states that duration "can usually be simply judged on a scale such as short-term, medium term or long-term". For the purposes of the assessment, duration is determined in relation to the phases of the Project, as follows:
- i. Short-term – assumed to cover construction plus one-year reinstatement.
 - ii. Medium term – assumed to be 2 to 15 years post construction and include the effects of permanent vegetation loss on the baseline environment.
 - iii. Long-term – assumed to be of a duration that extends longer than 15 years post construction when any committed mitigation planting will be established and has achieved its design intention.
- 3.3.50 The duration of the effect can also be described as transient (whether continuous or intermittent) or seasonal (views which would be subject to seasonal leaf cover).
- 3.3.51 In accordance with the principles in GLVIA3 (Ref 2), reversibility is reported as reversible or irreversible (i.e. permanent), and is related to whether the change can be reversed at the end of the phase of development under consideration (i.e. at the end of construction or at the end of the operational lifespan of the development).
- 3.3.52 Although unlikely for practical system operational reasons, the decommissioning and removal of the proposed 400 kV overhead line and the substations is possible. However, for the purposes of the assessment, all visual effects associated with the Project's operation are deemed to be irreversible (permanent) due to the operational lifetime of the infrastructure and long-term network requirements.

Making Judgements on Magnitude of Change

- 3.3.53 The magnitude of visual change is categorised as large, medium, small or very small by applying the indicators listed in **Table 3.5**. Judgements are supported by narrative

description linked back to evidence from the baseline study to explain the conclusions reached.

Table 3.5 Indicators of magnitude of visual change

Category	Indicators
Large	<p>The Project (or works to facilitate it) would be a prominent in the view and result in a substantial change to the composition and character of the existing view and how it is perceived.</p> <p>Typically, this would be where the Project would be seen in close proximity. Much of the view would be affected and there would be little backgrounding to reduce the degree of visual contrast.</p> <p>The duration/reversibility of effect is likely to be long-term and irreversible.</p>
Medium	<p>The Project (or works to facilitate it) would be very noticeable and result in a noticeable change to the composition and character of the existing view and how it is perceived.</p> <p>Typically, this would be where the Project (or works to facilitate it) would be seen in mid-range views but would still be conspicuous and well-defined. Only part of the view may be affected and there may be some backgrounding to reduce the degree of visual contrast.</p> <p>The duration/reversibility of effect is likely to be long-term and irreversible.</p>
Small	<p>The Project (or works to facilitate it) would form a small part of the view and result in a slight change to the composition and character of the existing view and how it is perceived.</p> <p>Typically, this would be where the Project would be seen in mid-range or distant views but would be indistinct and/or partially obscured. Only a small part of the view would be affected and there may be a high level of backgrounding to reduce the degree of visual contrast.</p> <p>The duration/reversibility of effect is likely to be medium-term and potentially reversible.</p>
Very small	<p>The Project (or works to facilitate it) would be very indistinct and result in a barely perceptible change to the character and quality of the existing view and how it is perceived.</p> <p>Typically, this would be where a development would form part of a long-distance panoramic view and/or where a very small proportion of the view is affected. There may be a high level of backgrounding to reduce the degree of visual contrast.</p> <p>The duration/reversibility of effect is likely to be short-term and reversible.</p>

3.3.54 The assessment also identifies views where no change is anticipated. In these instances, 'no change' is inserted into the appropriate magnitude of effect column and the resulting effect is identified as 'no effect'.

Judging Levels of Visual Effect

3.3.55 The final step in the assessment requires the judgements on the sensitivity of the visual receptors and the predicted magnitude of visual change to be combined to make an informed professional assessment on the significance of each visual effect.

- 3.3.56 In accordance with paragraph 5.55 of GLVIA3 (Ref 2), the evaluations of the individual aspects set out above (susceptibility, value, size and scale, geographical extent, duration and reversibility) are considered together to provide an overall profile of each identified visual effect. An overview is then taken of the distribution of judgements for each criterion to make an informed professional assessment of the overall level of effect, drawing on good practice guidance provided in GLVIA3 (Ref 2) and guided by the indicative criteria set out in **Table 3.6**. This determination relies on the application of professional judgment and expertise to account for the many variables involved, each of which is weighted differently based on the specific characteristics of the site and location in each case.
- 3.3.57 A rigid matrix-type approach, where the level of visual effect is defined simply based on the level of sensitivity combined with the magnitude of effect is not used. As such, the conclusion on the level of effect is not always the same for similar receptors. Although a numerical or formal weighting system is not applied, consideration of the relative importance of each aspect informs the overall decision.
- 3.3.58 Levels of effect are categorised as major, moderate, minor or negligible, with moderate and major effects deemed significant under the EIA Regulations.
- 3.3.59 A preliminary assessment of effects is presented within **Supplementary PEI Report Volume 2 Part B Chapter 3 Visual** and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 3 Visual (Ref 1). Further detail and justification will be provided in the Visual chapter and accompanying appendices of the ES.
- 3.3.60 As further assessment work is still to be conducted, the preliminary assessment only determines whether an effect is considered significant or not. In the full assessment presented in the ES, there will also be judgements on the category of the effect in accordance with the indicators outlined in **Table 3.6**.
- 3.3.61 Where an effect is reported in this Supplementary PEI Report it is an adverse effect unless stated otherwise.

Table 3.6 Categories and indicators of significance

Category	Definition	Significant effect
Major	<p>The proposed development will result in an obvious change in the view, likely affecting a visual receptor with a moderate or high susceptibility to that type of change.</p> <p>This level of effect may also occur when a medium scale of effect acts on a nationally valued view and/or a high susceptibility receptor.</p> <p>The effect is likely to be long-term and affect a relatively large area or relatively large number of people.</p>	Yes
Moderate	<p>The proposed development will result in a noticeable change in the view, likely affecting a viewer with a moderate susceptibility to that type of change and or locally valued view.</p> <p>This level of effect may also occur when a smaller scale of change acts on a higher susceptibility receptor or affects a</p>	Yes

Category	Definition	Significant effect
	large number of people, or a larger scale of effect acting on a lower susceptibility receptor or affecting fewer people. This level of effect may also occur when a large scale of effect occurs over a relatively short period or over a small area/affects few people.	
Minor	The development will result in a small change in the view over a long-term duration, likely affecting a smaller geographic extent and/or fewer people. This level of effect may also occur when a larger scale of effect is of short-term duration or is confined in its geographical extent.	No
Negligible	The Project will result in a barely perceptible alteration in the view.	No

- 3.3.62 The preliminary assessment considers the effects at construction and Year 1. The assessment presented in the ES considers the effects at construction, year 1 operation, and year 15 operation (by which time any new planting will be established and fulfilling its intended function).

Mitigation

- 3.3.63 The design is being developed iteratively with the assessment process. This means that those potentially significant adverse effects that can be avoided or reduced, have been designed out, and will continue to be designed out wherever possible.
- 3.3.64 The most effective mitigation measures are ones which are integral to the scheme, as described above. A distinction is therefore made between measures designed as an intrinsic part of the scheme (primary or embedded measures) and those which are intended to specifically counteract any residual negative effects of the Project (secondary measures).
- 3.3.65 The final step in the detailed assessment presented in the ES, is to summarise the likely significant residual visual effects remaining following mitigation.
- 3.3.66 Significance is categorised as major, moderate, minor, or negligible. As noted previously, unless otherwise stated, all identified effects are considered adverse.
- 3.3.67 Each of the significance categories covers a broad range of effects and represents a continuum or sliding scale. Where an effect falls at the upper or lower end of the category, this will be noted and explained as part of the detailed assessment presented in the visual chapter of the ES.

Residential Visual Amenity

Background

- 3.3.68 The Landscape Institute's (LI) Residential Visual Amenity Assessment (RVAA) guidance (TGN 2/19) (Ref 5) sets out an approach to the assessment of potential effects on residential visual amenity.

- 3.3.69 Paragraph 1.2 of TGN 2/19 (Ref 5) defines residential visual amenity as *“the overall quality, experience and nature of views and outlook available to occupants of residential properties, including views from gardens and domestic curtilage”*.
- 3.3.70 Residential visual amenity is one component of ‘Residential Amenity’ which also includes other components of residential amenity including noise, vibration, air quality, access to daylight, and which may otherwise be referred to collectively as ‘living conditions’.
- 3.3.71 The main difference between RVAA and Landscape and Visual impact assessment (LVIA) is that RVAA focuses on views from private properties whilst LVIA focusses on public and wider visual amenity.
- 3.3.72 Paragraph 6.17 of GLVIA3 (Ref 2) reinforces TGN 2/19 (Ref 5), stating that *“Effects of development on private property are frequently dealt with mainly through residential amenity assessments. These are separate from LVIA although visual effects assessment may sometimes be undertaken as part of a residential amenity assessment, in which case this will supplement and form part of the normal LVIA for a project”*.
- 3.3.73 Changes in views and visual amenity because of development are considered in the planning process. In respect of private views and visual amenity, it is widely accepted that no one has ‘a right to a view’. This includes situations where a residential property’s outlook is judged to be ‘significantly’ affected by a proposed development, a matter which has been confirmed in several appeal/public inquiry decisions.
- 3.3.74 It is not uncommon for significant adverse effects on views and visual amenity to be experienced by people at their place of residence because of new development being introduced into the landscape. This does not in itself necessarily cause particular planning concern. However, there are situations where the views of a proposed development from a property or its curtilage are judged to be so overbearing or unavoidable that it is not generally considered to be in the public interest to permit such conditions to occur where they did not exist before.
- 3.3.75 Paragraph 2.1 of TGN 2/19 (Ref 5) introduces an approach to considering a potential ‘Residential Visual Amenity Threshold’, beyond which effects may be of *“such nature and/or magnitude that it potentially affects ‘living conditions’ or residential amenity”*. Determining whether the threshold has been reached requires informed professional judgement.
- 3.3.76 LVIA findings of significant (adverse) visual effects at a residential property do not automatically imply the need for an RVAA. However, for properties close to a development proposal, and which would be likely to experience an adverse visual effect of major significance, an RVAA may be appropriate to establish whether the Residential Visual Amenity Threshold is likely to be, or has been, reached.
- 3.3.77 Section 4 of TGN 2/19 (Ref 5) recommends a four-step approach which draws heavily on the GLVIA3 (Ref 2) principles and process. The first three steps of the approach *“fall broadly within the normal scope of LVIA consisting of an assessment of the magnitude and significance of visual effect (in the EIA context) and change to visual amenity likely to be experienced by occupants at those individual residential properties which were identified”*.
- 3.3.78 The fourth step *“requires a further assessment of change to visual amenity examining whether the Residential Visual Amenity Threshold is likely to be, or has*

been, reached. Whether or not this final step is engaged depends on the circumstances specific to the case”.

- 3.3.79 The following text summarises the four steps and how they will be applied to the Project.

Step 1: Scope of the assessment

- 3.3.80 In accordance with the key principles of the Holford Rules, avoiding settlements and residential properties is a key consideration of the routeing process for the Project in order to avoid or minimise the potential for significant effects on the views and visual amenity of residential receptors.
- 3.3.81 The detailed routeing process will make every effort to maintain a minimum distance of 150 m between a residential property and the Project. In addition, the routeing process will seek to avoid introducing pylons into the principal views from residential properties. This will be informed by observations made during fieldwork which will consider the orientation of properties, the likely availability of views from the property and its curtilage and the presence of intervening screening features (e.g., localised landform, woodland, forestry and vegetation, buildings and other landscape features). Nevertheless, given the nature of the development, the potential is likely to remain for significant visual effects in relation to views and visual amenity, experienced from residential properties near the Project.
- 3.3.82 To determine whether more detailed consideration of effects on views and visual amenity from residential properties is required in the form of an RVAA, any property where occupants are likely to experience significant adverse effects that are judged to be major will be included in the assessment.
- 3.3.83 Properties will be assessed individually, but if their outlook and/or views are the same in all aspects (for example, if a development is visible from the rear gardens only of a small row of houses), they will potentially be assessed as a group. This will be at the discretion of the assessor and will be supported by a clear explanation of the reason for the grouping or clustering.

Step 2: Evaluation of baseline visual amenity and receptor sensitivity

- 3.3.84 As outlined in paragraph 4.23 TGN 2/19 (Ref 5), residents at home are typically highly susceptible to changes in their view, whether from the property itself, its curtilage, or its access.
- 3.3.85 Paragraph 6.36 GLVIA3 (Ref 2) states that *“in the assessment of visual effects it will be important to recognise that residents may be particularly susceptible to changes in their visual amenity - residents at home, especially using rooms normally occupied in waking or daylight hours, are likely to experience views for longer than those briefly passing through an area”.*
- 3.3.86 While an appreciation of the surrounding views is often material to the quality of life experienced by residents, and therefore, the value of their private views is typically considered high by residents, this is not always the case. Professional judgment will be applied to describe the views experienced in terms of their nature, extent, and quality. This will include the direction of the view, the orientation of buildings, the location of garden or curtilage areas access and the presence of intervening features such as vegetation, with the seasonality of vegetation screening and potential

changes to forestry being referred to where applicable. The presence of other existing transmission infrastructure, or other infrastructure will also be noted.

- 3.3.87 Taking account of the high susceptibility of receptors and assuming that the value of the views is high, the overall sensitivity of residential receptors is typically judged to be high.

Step 3: Assessment of likely change to visual amenity experienced by residents

- 3.3.88 Step 3 will identify those properties requiring further assessment in Step 4 by reviewing the results of the viewpoint assessment to identify *“situations where the effect on the outlook/visual amenity of a residential property is so great that it is not generally considered to be in the public interest to permit such conditions to occur where they did not exist before”* as explained in paragraph 1.6 of TGN 2/19 (Ref 4). Given the high threshold implied, this is most likely to be situations where effects of major significance are predicted, rather than where effects of moderate significance are predicted.
- 3.3.89 Considerations set out in TGN 2/19 (Ref 5) provide a framework for describing and evaluating the predicted magnitude of visual change and related visual amenity. Factors to be considered include:
- i. *“distance of property from the proposed development having regard to its size scale and location relative to the property (e.g., on higher or lower ground);*
 - ii. *type and nature of the available views (e.g., panoramic, open, framed, enclosed, focused etc.) and how they may be affected, having regard to seasonal and diurnal variations;*
 - iii. *direction of view/aspect of property affected, having regard to both the main/primary and peripheral/secondary views from the property;*
 - iv. *extent to which development/landscape changes would be visible from the property (or parts of) having regard to views from principal rooms, the domestic curtilage (i.e., garden) and the private access route, taking into account seasonal and diurnal variations;*
 - v. *scale of change in views having regard to such factors as the loss or addition of features and compositional changes including the proportion of view occupied by the development, taking account of seasonal and diurnal variations;*
 - vi. *degree of contrast or integration of new features or changes in the landscape compared to the existing situation in terms of form, scale and mass, line, height, colour and texture, having regard to seasonal and diurnal variations;*
 - vii. *duration and nature of the changes, whether temporary or permanent, intermittent or continuous, reversible or irreversible etc.; and*
 - viii. *mitigation opportunities – consider implications of both embedded and potential further mitigation”.*
- 3.3.90 This step will typically involve both desk study and detailed fieldwork but is unlikely to require visits to individual properties which, for the purposes of this step, can generally be assessed from the nearest publicly available vantage/access point. Where this is not feasible then visits to certain individual properties (or clusters of) may be appropriate.

- 3.3.91 Step 3 concludes by identifying which properties should be assessed further in the final step in order to reach a judgement regarding the Residential Visual Amenity Threshold.

Step 4: Forming the Residential Visual Amenity Professional Judgement

- 3.3.92 The final step of RVAA will involve a more detailed examination of the predicted effects on the residential visual amenity at those properties identified for further assessment in the previous step. There is an important distinction between this concluding step of RVAA and the preceding one.
- 3.3.93 In Step 3 the assessment will reach a conclusion with respect to magnitude and (EIA) significance of visual effect, and the change in visual amenity at the property. In this final step, properties which are predicted to experience the largest magnitude of visual effect will be subject to a further professional judgement associated with the Residential Visual Amenity Threshold.
- 3.3.94 As detailed in TGN 2/19 (Ref 5) *“This concluding judgement should advise the decision maker whether the predicted effects on visual amenity and views at the property are such that it has reached the Residential Visual Amenity Threshold, therefore potentially becoming a matter of Residential Amenity. This judgement should be explained in narrative setting out why the effects are considered to reach the Residential Visual Amenity Threshold. Equally, judgements should explain why the threshold has not been reached”*.
- 3.3.95 The key point regarding Step 4 is that the judgement required in this final, concluding step *“goes beyond the assessment undertaken in Step 3 which is restricted to judging the magnitude and significance of visual effect, typically as a supplement to the accompanying LVIA”*. If effects identified within the LVIA undertaken during Step 3 require further consideration, the RVAA approach to Step 4 will be undertaken in accordance with the approach advocated within TGN 2/19 (Ref 5) and the results reported in the ES.

3.4 Technical Information

General Site Photography

- 3.4.1 Baseline photographs will be taken using a Canon EOS digital SLR with a full frame sensor (36 x 24 mm) using a 50 mm equivalent fixed focal length lens. Photographs are taken in accordance with best practice guidance, including the Landscape Institute’s TGN 06/19 (Ref 4), and their location recorded using an on-site handheld GPS (Type 3 LI TGN 06/19) (Ref 4). Where required, the resulting images will be stitched together using specialist PTGui software to create 90° panoramic baseline views. The time at which the photographs are taken, and the prevailing weather conditions, will be recorded for each viewpoint. For general site photography, 360° panoramas will be taken, unless there are privacy concerns related to nearby properties.
- 3.4.2 Photographs are undertaken in winter and in clear lighting conditions.

Photography for Photomontage

- 3.4.3 Baseline photography is required for the production of photomontages to accurately represent the Project. This type of photography will require a higher level of accuracy and will be subject to additional survey methods in line with TGN 06/19 (Ref 4). A full methodology for the photography for photomontage (Type 4 LI TGN 06/19) production and the photomontage process will be submitted with the ES and the DCO application.

Wireframes

- 3.4.4 Wireframe diagrams (Type 2 LI TGN 06/19) will be prepared, showing the outline of the Project. These are computer-generated line drawings based on the digital terrain model, combined with information about the location and scale of the Project's components, to provide a relatively simple indication of how the Project would appear from different viewpoints. Wireframe diagrams will be created for all viewpoints to support the assessment process.
- 3.4.5 For each viewpoint, wireframe renders will be generated using the software called TrueView Visuals. These are based on a digital terrain dataset (Ordnance Survey (OS) Terrain 50), which uses a model of the Project to provide an accurate depiction of its appearance.
- 3.4.6 The wireframes will represent the maximum theoretical visibility of the development on bare ground (i.e. assuming no vegetation, buildings, or other vertical structures are present to provide any screening). In reality, visibility also depends on both weather conditions and lighting. The existing 400 kV overhead lines to be retained will also be included on the baseline wireframes for comparison against the wireframes of the Project.

Zone of Theoretical Visibility

- 3.4.7 To help identify the locations from which the proposed 400 kV overhead line would be visible, a preliminary ZTV map has been prepared for the Project. ZTV maps are essential for refining the Study Area and assessing the potential visual effects of the project. While the ZTV maps show theoretical visibility, actual visibility might be reduced in areas with extensive vegetation. Therefore, professional judgment is used to focus on areas with the most significant potential visual impacts.
- 3.4.8 Although significant effects beyond 5 km are unlikely, the 10 km cut-off for the ZTV is used to:
- i. assess cumulative visual impacts with other developments; and
 - ii. identify effects on distant but very sensitive receptors.
- 3.4.9 ZTV maps are created using recent topographic data and assume an eye level of 1.6m (representing an average-height person). The accuracy of the maps is verified on-site following guidance from TGN 06/19 (Ref 4). This approach ensures that the potential visual impact of the project is assessed comprehensively and in line with professional standards.
- 3.4.10 ZTV maps take account of the following factors:
- i. the existing topography using OS terrain 50 data;

- ii. existing buildings by applying a 8 m average height to the OS Mastermap layer; and
- iii. existing woodland cover by applying a 15 m average height to the National Forest Inventory which is produced by the Forestry Commission and records all forests and woodlands with an area of 0.5 ha and over.

3.4.11 Individual and small groups of trees are excluded as, during winter, these will provide only minimal screening of the Project.

3.5 Assessment Assumptions and Limitations

3.5.1 The following limitations and assumptions have been identified for the Visual assessment .

- i. All baseline surveys have been conducted on publicly accessible land. If access is not possible from publicly accessible areas, professional judgement has been used to estimate and document the likely effects.
- ii. Detailed arboricultural information will not be available until the ES stage. For the preliminary assessment, professional judgement has been applied to determine the effects of woodland loss on the visual receptors.
- iii. Draft Zone of Theoretical Visibility (ZTV) maps have been produced to inform the definition of the Study Area and the selection of representative viewpoints and are shown on **Supplementary PEI Report Volume 2 Part B Chapter 3 Figure 3.2 Zone of Theoretical Visibility (ZTV)** and June 2025 PEI Report Volume 2 Part B Section 1-4 and 6-7 Figure 3.2 Zone of Theoretical Visibility (ZTV) (Ref 1). . This illustrates the theoretical visibility of the proposed 400 kV overhead line and substations up to 10 km during the operational phase;
- iv. The preliminary assessment assumes that vegetation removed during construction would be reinstated, except where there are planting restrictions associated with requirements to maintain the required safety clearance. Vegetation clearance assumptions are set out in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**.
- v. The ES will provide final details of embedded, standard, and additional mitigation measures, which will be informed by the findings of the previously published June 2025 PEI Report, the Supplementary PEI Report and statutory consultation and which will have been considered during the assessment.
- vi. A series of representative viewpoints is included at **Supplementary PEI Report Volume 3 Part B Appendix 3A Proposed Viewpoints**. These are used to inform the assessment of effects on each community area. The magnitude of change likely to be experienced at each representative viewpoint will be presented in the ES, but no assessment of the likely significance of effects will be made as the viewpoint may be used for assessing different receptor groups with different susceptibilities.
- vii. The general approach taken to determining the significance of effect in this preliminary assessment is only to state whether effects are likely or unlikely to be significant, rather than assigning significance levels, which will be undertaken at the ES Stage.

- viii. Judgements regarding the value and susceptibility of each visual receptor are detailed in **Supplementary PEI Report Volume 3 Part B Appendix 3A Proposed Viewpoints**, while the assessment of whether the effects on each visual receptor are likely to be significant are presented in **Supplementary PEI Report Volume 2 Part B Sections 5 Chapter 3 Visual** and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 3 Visual (Ref 1).; and
- ix. There are very few Neighbourhood Plans and Village Design Statements for parishes within the Study Area but the Levelling-up and Regeneration Act 2023 (the LURA) (Ref 13) should mean that more are in preparation. They have not therefore been considered at this preliminary assessment stage but will be reviewed and used to inform the assessment presented in the visual chapter of the ES.

3.5.2 These key parameters and assumptions will be reviewed based on the design presented in the DCO application and, where necessary, updated or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, drawing particular attention to any areas that may have changed from that presented in this preliminary assessment

References

- Ref 1 National Grid Electricity Transmission (2025). Grimsby to Walpole Preliminary Environmental Information Report [online]. Available at: <https://www.nationalgrid.com/the-great-grid-upgrade/grimsby-to-walpole/document-library#4257225834-3023854277> [Accessed 12 September 2025].
- Ref 2 Landscape Institute and Institute for Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment – 3rd Edition. Abingdon: Routledge.
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- Ref 7 The Planning Inspectorate (2024). Scoping Opinion: Proposed Grimsby to Walpole Project [online]. Available at: <https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020036-000109-Scoping%20Opinion%202017%20EIA%20Regs.pdf> [Accessed 18 October 2024].
- Ref 8 National Grid Electricity Transmission (2024). Grimsby to Walpole Environmental Impact Assessment Scoping Report [online]. Available at: <https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020036-000004-EN020036%20-%20Scoping%20Report%20Volume%201%20Main%20Report.pdf> [Accessed 18 October 2024].
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- Ref 13 Levelling-up and Regeneration Act 2023 [online]. Available at: <https://www.legislation.gov.uk/ukpga/2023/55/contents> [Accessed 20 September 2024].

4. Ecology and Biodiversity

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4. Ecology and Biodiversity

4.1 Overview

- 4.1.1 This Appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Ecology and Biodiversity assessment for the Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.
- 4.1.2 This Appendix also details the surveys and assessments which are being carried out to inform the ecological baseline. The status of each survey and assessment at the time of writing this Supplementary PEI Report are also described.

4.2 Guidance Specific to Ecology and Biodiversity Assessment

- 4.2.1 Relevant guidance that has informed the Supplementary PEI Report are listed below. These will also be taken into account as part of the assessment reported within the ES:
- i. Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater, Coastal and Marine (Ref 2).
 - ii. Natural England and Department for Environment, Food and Rural Affairs (Defra) Standing Advice (protected species) (Ref 3);
 - iii. Birds of Conservation Concern 5 (BoCC) (Ref 4);
 - iv. The International Union for Conservation of Nature Red List of Threatened Species (Ref 5);
 - v. The Statutory Biodiversity Metric including Calculation Tool, User Guide, and Technical Annex 1: Condition Assessment Sheets and Methodology (Ref 6);
 - vi. Biodiversity Net Gain: Good Practice Principles for Development, A Practical Guide (Ref 7);
 - vii. The UK Habitat Classification System (Ref 8);
 - viii. Bat Surveys for Professional Ecologists: Good Practice Guidelines (Ref 9);
 - ix. Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*) (Ref 10);
 - x. The Great Crested Newt Mitigation Guidelines (Ref 11);
 - xi. Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation (Ref 12);
 - xii. The Mammal Society Surveying Badgers (Ref 13);

- xiii. The Water Vole Mitigation Handbook (Ref 14);
- xiv. The Water Vole Conservation Handbook (Ref 15);
- xv. Ecology of the European Otter (Ref 16);
- xvi. British Standards Institution (2006) BS EN 149622006, BS 6068-5.402006: Water quality – Guidance and selection of fish sampling methods. London BSI. (Ref 17);
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- xix. Freshwater macro-invertebrate analysis of riverine samples (Ref 18);
- xx. Freshwater macro-invertebrate sampling in rivers (Ref 19);
- xxi. UKTAG River Assessment Method Macrophytes and Phytobenthos: Macrophytes (River LEAFPACS2) (Ref 20);
- xxii. NatureScot (2017) Recommended bird survey methods to inform impact assessment of onshore windfarms (Ref 21);
- xxiii. Bird Survey and Assessment Steering Group. (2022). Bird Survey Guidelines for assessing ecological impacts (Ref 22);
- xxiv. RSPB Bird Monitoring Methods (1998) (Ref 23);
- xxv. British Trust for Ornithology Common Birds Census Instructions (1983) (Ref 24);
- xxvi. British Trust for Ornithology (BTO) WeBS methods6 (Ref 25) and
- xxvii. Species – specific methods for raptors (Hardey et al., 2013) (Ref 26) and barn owl (Shawyer, 2012) (Ref 27).

4.2.2 Reference should also be made to the guidance listed within the assessment methodologies for the following disciplines, which have informed the Ecology and Biodiversity assessment.

- i. Water Environment and Flood Risk;
- ii. Geology and Hydrogeology;
- iii. Agriculture and Soils;
- iv. Noise and Vibration; and
- v. Air Quality.

4.3 Data Sources

- 4.3.1 The following data sources have been used to inform the Ecology and Biodiversity assessment:
- i. the Natural England website (Ref 28) for information on statutory designated sites of nature conservation interest;
 - ii. the MAGIC website (Ref 29) to identify the location (and details) of statutorily designated sites, ancient woodland, Habitats of Principal Importance (HPI's) (including Priority River Habitat) and for any granted European Protected Species Licence applications;
 - iii. the Joint Nature Conservation Committee (JNCC) website (Ref 30) for site information and designation details of SACs, SPAs and Ramsar sites;
 - iv. aerial imagery (Google Maps);
 - v. Local Environmental Records Centres, (Greater Lincolnshire Nature Partnership (GLNP), Cambridgeshire and Peterborough Environmental Records Centre (CPERC) and Norfolk Biodiversity Information Service (NBIS)) for information on pre-existing ecological data (i.e. locations of non-statutory sites designated for nature conservation, existing records of protected, notable and invasive non-native species).
 - vi. Environment Agency Ecology and Fish Data for species records of fish, macroinvertebrate and macrophytes species (Ref 31);
 - vii. Environment Agency Catchment Data Explorer for data on WFD water bodies and water catchments (Ref 32).

4.4 Approach to Ecology and Biodiversity Assessment

Scope of Assessment

- 4.4.1 The scope of the assessment is informed by the Scoping Opinion (Ref 33) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 34). The scope has also been informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Biodiversity chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 4.4.2 Non statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 35). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 4.4.3 The scope of the Ecology and Biodiversity assessment for all Sections of the Project includes consideration of the potential temporary and permanent effects of construction and operation and maintenance of the Project. A summary of the sensitive receptors and potential impacts considered is provided in **Table 4.1**.

Table 4.1 Scope of the assessment

Receptor	Potential Effects Considered
<p>Sites Statutorily designated for their biodiversity value:</p> <ul style="list-style-type: none"> • Special Protection Areas (SPA) • Special Areas of Conservation (SAC) • Ramsar Sites • Sites of Special Scientific Interest (SSSI) • National Nature Reserves (NNR) 	<ul style="list-style-type: none"> • habitat loss; • habitat modification/degradation, fragmentation; • direct and indirect changes in surface water quality and quantity; and • effects on qualifying features/notified species.
<p>Sites non-statutorily designated for their biodiversity value: Local Wildlife Sites</p>	<ul style="list-style-type: none"> • habitat loss; • habitat modification/degradation, fragmentation; • direct and indirect changes in surface water quality and quantity; and • effects on qualifying features/notified species.
<p>Ancient Woodland</p>	<ul style="list-style-type: none"> • habitat loss; • habitat modification and fragmentation; • change in surface water quality; • change in air quality.
<p>Aquatic and terrestrial habitats</p>	<ul style="list-style-type: none"> • habitat loss; • habitat modification, fragmentation; • change to surface water quality or flows
<p>Protected or notable species which are either confirmed present or potentially present within the Survey Areas:</p> <ul style="list-style-type: none"> • Terrestrial invertebrates; • great crested newt; • reptiles; • wintering birds; • breeding birds; • badger; • bats; • otter; • water vole; • fish; • aquatic macroinvertebrates and macrophytes; and • other notable species. 	<ul style="list-style-type: none"> • Habitat loss/severance/degradation; • Disturbance; • Killing/injury;
<p>Invasive Species (INNS)</p>	<p>Risk of spread</p>

Study Areas

- 4.4.4 The desk Study Areas for the Ecology and Biodiversity assessment have been informed by published guidance and professional judgement. They include the area within the draft Order Limits and a zone of potential influence. This zone represents the areas within which effects could reasonably occur as a result of the Project and associated activities. It should be noted that for sites designated for their biodiversity value, the Project's zone of influence can vary depending on the importance or sensitivity of such sites. This could for example relate to, where the features that define a given site are mobile, and/or there is indirect connectivity between the Project and a given site. The desk Study Areas (hereafter referred to as the 'Study Area(s)') for different ecological features are provided in Table 4.2 within the **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 4 Ecology and Biodiversity**. The Study Areas will be reviewed and, as appropriate, refined for the assessment presented in the ES.

Survey Areas

- 4.4.5 In addition to the collation of desk-based data, site survey data are in the process of being collected, and this work is ongoing. Apart from pre-construction surveys and those specifically required to collect data to inform any applications for protected species licences, these surveys are anticipated to be complete by the end of 2025. Once planned surveys to support the DCO application are complete, results will be collated with the survey data already collected to date, for inclusion within the ES to be submitted with the DCO application. The field Survey Areas (hereafter referred to as the 'Survey Areas') for ecological features are defined in **Table 4.1**. The Survey Areas are considered sufficient to assess the potential worst-case zone of influence of the Project on the relevant ecological features concerned.
- 4.4.6 Ecological surveys will be undertaken within the appropriate seasons, where possible, and will follow best-practice methodologies. Any limitations to the assessments will be documented accordingly within the technical appendices to be submitted with the ES.

Scope and Methods of Ecological Field Surveys

- 4.4.7 The following surveys are being completed to inform the ecological baseline. The scope of surveys will be reviewed as baseline data is collected. A summary of the baseline data collected to date within the Section 5 Survey Area is detailed in the **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 4 Ecology and Biodiversity**.
- i. UKHab habitat survey;
 - ii. hedgerow surveys;
 - iii. detailed habitat/vegetation surveys (i.e. National Vegetation Classification (NVC) surveys) where areas of potential botanical importance are identified;
 - iv. badger surveys;
 - v. great crested newt Habitat Suitability Index (HSI) surveys;
 - vi. great crested newt Environmental DNA (eDNA);

- vii. preliminary bat roost appraisal of trees/woodland, buildings and structures, which may identify requirements for bat emergence and/or re-entry survey and aerial tree climbing survey;
 - viii. bat activity surveys, supplemented with automated (static) bat detectors;
 - ix. bat crossing point surveys;
 - x. riparian mammal surveys (otter and water vole);
 - xi. reptile presence/absence surveys;
 - xii. terrestrial invertebrate surveys (where potentially important terrestrial invertebrate habitat has been identified during UKHab surveys);
 - xiii. potential for other aquatic species survey requirements (macroinvertebrates, macrophytes, and fish);
 - xiv. Vantage Point (VP) surveys for birds;
 - xv. breeding bird walkover surveys;
 - xvi. wintering bird walkover surveys;
 - xvii. driven wintering bird surveys; and
 - xviii. species-specific surveys for bird.
- 4.4.8 Incidental records of invasive species and potential for any other notable species, such as brown hare and hedgehog, have also been recorded during the completion of the above surveys.
- 4.4.9 Arboricultural surveys will be undertaken separately where required and will be used to inform the assessments reported within the ES.
- 4.4.10 The surveys undertaken will inform any protected species mitigation licences (where required) prepared in draft for advisory comment from Natural England, all of which will form part of the DCO application.
- 4.4.11 A habitat condition assessment will also be undertaken concurrently with the UKHab surveys to inform a BNG assessment.

Table 4.2 Scope and methods to be used during biodiversity surveys

Survey	Survey Area and survey method reference	Status of survey/assessment
Fixed Wing Flyover	Within and up to 50 m of the draft Order Limits, to provide an indication of the habitats present, prior to the Phase 1 habitat survey being undertaken on the ground.	Complete
UKHab Habitat	Within and up to 50 m from the draft Order Limits. (Ref 8).	Surveys commenced in 2024; to be completed in 2026.
Habitat Condition Assessments (HCA)	Land within the draft Order Limits in accordance with the most up-to-date guidance (Ref 8) at the time the surveys are conducted.	Assessments commenced in 2024; to be completed in 2026.

Survey	Survey Area and survey method reference	Status of survey/assessment
Detailed Habitat/Vegetation Surveys (NVC)	Affected locations within the draft Order Limits where UKHab habitat survey identifies habitat as being particularly species diverse and/or sensitive and/or a type restricted in the UK/region. The survey would be undertaken in accordance with the JNCC NVC Users' Handbook (Ref 36).	Surveys commenced in 2024; to be completed in 2026.
Hedgerow Surveys	Hedgerows within the draft Order Limits. Habitat condition assessments will be completed to inform the BNG assessment and data will be collected to identify if hedgerows are 'Important' under the Hedgerow Regulations 1997. The survey would be undertaken in accordance with the Hedgerow Survey Handbook (Ref 37).	Surveys to be completed in 2026.
Badger	Targeted survey of suitable habitat within and up to 30 m of the draft Order Limits, in accordance with Harris <i>et al.</i> , 1989 (Ref 13).	Surveys commenced in 2024; to be completed in 2026.
Badger bait-marking	Bait-marking surveys of main setts impacted by the Project in accordance with Delahay <i>et al.</i> , 2000 (Ref 38).	Surveys to be completed in 2026.
Great crested newt: Habitat Suitability Index	Within and up to 500 m of the draft Order Limits, in accordance with Oldham <i>et al.</i> , 2000 (Ref 10).	Surveys commenced in 2024; to be completed in 2026.
Great crested newt: eDNA (if required)	Within and up to 500 m of the draft Order Limits, in accordance with Biggs <i>et al.</i> (2014) (Ref 39).	Surveys commenced in 2024; to be completed in 2026.
Great crested newt population assessment surveys (if required)	Within and up to 500 m of the draft Order Limits, where eDNA surveys have confirmed GCN presence (Ref 40). Requirements for these surveys will be confirmed with Natural England and will depend upon European Protected Species (EPS) licensing requirements.	Surveys to be completed in 2026 (if required).
Bat activity supplemented with automated (static) bat detectors	Bat activity transects and static detector monitoring at substation sites within the draft Order Limits where permanent habitat loss is expected.	Surveys commenced in 2024; to be completed in 2026.
	Static detector survey at selected locations along the preferred route corridor of the overhead line. Bat surveys to be undertaken in accordance with the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Ref 9).	Surveys commenced in 2025, to be completed in 2026.
Preliminary bat roost assessment of trees/woodland,	Daytime bat walk-over to evaluate the suitability of features for roosting bats within the draft Order Limits, where required/affected.	Surveys commenced in 2024; to be completed in 2026.

Survey	Survey Area and survey method reference	Status of survey/assessment
buildings and structures Ground-based tree assessment	Bat roost surveys to be undertaken at targeted locations where direct impacts cannot be avoided and it is considered that additional measures for roost replacement may be required above those that are set out in the Outline Code of Construction Practice (Supplementary PEI Report Volume 2 Part A Appendix 5A Draft Outline Code of Construction Practice).	
Bat roost	Bat roost surveys to be undertaken in accordance with the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Ref 9). This will include aerial tree inspection for trees, and emergence surveys for any buildings/structures.	
Bat crossing point	Bat crossing point surveys to be undertaken at targeted locations along the route. Locations to be determined using bat activity data, desk study data and vegetation/tree removal data.	
Otter	Otter holt sites will be identified through targeted survey of watercourses/ditches and associated areas of terrestrial habitat up to 200 m from the point of impact, in accordance with standard guidance (Ref 16). Where holt sites are present consideration will be given to the monitoring these locations to characterise their use by otter.	Surveys commenced in 2024; to be completed in 2026.
Otter holt monitoring	Potential holt/couches that could be impacted by the Project will be monitored using infra-red camera traps to determine their use by otters, in accordance with guidance in Findlay <i>et al.</i> , 2023 (Ref 41).	Surveys commenced in 2025, to be completed in 2026.
Water vole	Surveys for water vole will be completed where habitats are suitable and will be impacted by the Project. Targeted survey would be undertaken of sections of watercourses/ditches that cross the draft Order Limits and up to 500 m adjacent in accordance with standard guidance (Ref 15).	Surveys commenced in 2024; to be completed in 2026.
Reptile presence/absence	Affected and unavoidable locations within the draft Order Limits where habitat survey identifies habitat as being particularly suitable habitat for reptiles. Professional judgement based on the habitat and Froglife's Advice Sheet 10 for Reptile Surveys (Ref 12).	Assessments to be undertaken in 2026.
Terrestrial invertebrate	Affected and unavoidable locations within the draft Order Limits where the UKHab (habitat	Assessments to be undertaken in 2026.

Survey	Survey Area and survey method reference	Status of survey/assessment
	<p>survey) identifies habitat as being potential significant habitat for terrestrial invertebrates.</p> <p>The survey methodology would be dependent on the target species.</p>	
Wintering bird	<p>Winter data will be collected using VP surveys undertaken at strategic locations across the draft Order Limits (Ref 21). A ground-truthing visit will be undertaken to locate suitable locations for VP surveys, and desk-based work is ongoing to determine the short list of VP surveys that will be taken forward to the final survey design. It is proposed that each VP viewshed will be observed for a minimum of 6 hours per month from October to March, inclusive, as well as spring (March and April) and autumn (July to September) passage periods in specific locations. The survey corridor will extend 500 m either side of the draft Order Limits where possible.</p> <p>Transects and habitat surveys will be undertaken where birds, especially those that are qualifying features of designated sites, are likely to feed or roost and the areas potentially affected by the Project on a monthly basis between October and March, inclusive. Consideration will be given to completing two surveys per month in areas where risks to over-wintering birds are greater.</p> <p>Nocturnal surveys will be undertaken in strategic locations, which overlap with the Impact Risk Zone (IRZ) of international sites, targeting primarily golden plover and lapwing.</p> <p>These methods are subject to change dependant on data requirements to inform the Habitats Regulation Assessment (HRA) and assessment of potential impacts of the Project.</p>	Surveys commenced in 2022; to be completed in 2026.
Breeding bird	<p>Breeding bird survey transects have been undertaken at 16 locations along the route corridor from late March to early July 2024. The transects are focussing on representative areas, focused upon locations of the emerging preferred substation siting zones, waterbody crossings, wetlands, and habitats which may support a range of breeding birds based upon aerial imagery. Transects have been undertaken in accordance with Bird Survey Guidelines methodology.</p>	Surveys commenced in 2024; and were completed in 2025.

Survey	Survey Area and survey method reference	Status of survey/assessment
Aquatic Habitat Appraisals	<p>Initial Aquatic Habitat Appraisal surveys were completed on all watercourses within the draft Order Limits that may be impacted by the Project to scope the aquatic quality and therefore any further survey requirements. Surveys were completed over a representative 100 m stretch autumn/winter 2024 and winter/spring 2025 and autumn. Where weather and flow conditions are suitable, these surveys can be completed all year round.</p> <p>These surveys recorded the suitability for aquatic receptors (fish, macro-invertebrates and macrophytes) by measuring physical (i.e. water depth, flow, barriers to migration) and chemical (i.e. temperature, dissolved oxygen, pH) parameters, with the results informing the survey requirements for specific receptors.</p>	Surveys commenced in in 2024 and were completed in 2025.
Fish	<p>Where the walk-over survey determines that watercourses that are suitable for fish, surveys will be completed at targeted locations at crossing points and locations of proposed instream works (i.e. locations of temporary/permanent outfalls and river crossings) within the draft Order Limits.</p> <p>Surveys will be completed over a representative 100 m stretch between 16 June and 1 October and follow British and European Standards (Ref 42). Specific methodologies will depend on the watercourse characteristics (primarily width and depth of the watercourse) but it is expected that electric fishing will represent the primary method. This will follow industry guidance (Ref 43) and compliant with British and European Standards (Ref 44).</p> <p>Specific methods will depend on the watercourse characteristics (primarily width and depth of the watercourse) but it is expected that electric fishing will represent the primary method. This will follow industry guidance and compliant with British and European Standards (Ref 44).</p>	Surveys commenced in in 2025, to be completed in 2026 if required.
Aquatic macro-invertebrate	Where the walk-over survey determines that watercourses that are suitable for macroinvertebrates, surveys will be completed at targeted locations at crossing points and locations of proposed instream works (i.e. locations of temporary/permit outfalls and river crossings) within the draft Order Limits.	Surveys commenced in spring 2025 and were completed in autumn2025, .

Survey	Survey Area and survey method reference	Status of survey/assessment
	<p>Two separate surveys will be completed over the same representative 100 m stretch in Spring (March - May) and Autumn (September – November) according to industry guidance (Ref 45) and compliant with British and European Standards (Ref 46)</p> <p>Macroinvertebrate samples will be processed to mixed taxon level (also known as RIVPACS taxonomic-level TL5) following industry guidance (Ref 46).</p>	
Aquatic macrophytes	<p>Where the walk-over survey determines that watercourses that are suitable for macrophytes, surveys will be completed at targeted locations at crossing points and locations of proposed instream works (i.e. locations of temporary/permit outfalls and river crossings) within the draft Order Limits.</p> <p>Surveys will be completed over a representative 100 m stretch in summer (May – September) following standard industry guidance (Ref 47 and Ref 48) which conforms to British and European Standards (Ref 46).</p>	Surveys commenced and were completed in 2025.
Invasive non-native species	Invasive non-native plant and animal species will be recorded as part of the surveys for terrestrial and aquatic habitats, terrestrial and aquatic invertebrate surveys and mammal surveys, e.g. American mink as part of otter surveys.	Surveys commenced in 2024; to be completed in 2026.
Other protected and notable species	Evidence and/or sightings of other protected and notable species were noted as part of the surveys for terrestrial and aquatic habitats and species. Potential for these species was noted during the terrestrial and aquatic habitat surveys.	Surveys commenced in 2024; to be completed in 2026.

Assessment Methodology

- 4.4.12 The following section summarises the assessment methodology for the ecology and biodiversity assessment which builds on the general assessment methodology presented in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**.
- 4.4.13 The impact assessment is being undertaken in accordance with best practice guidance for Ecological Impact Assessment (EclA), issued by CIEEM entitled 'Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater, Coastal and Marine' (Ref 2) as summarised below.
- 4.4.14 The principal steps involved in the CIEEM approach can be summarised as:
- Ecological features that are both present and might be affected by the Project are identified (both those likely to be present at the time works begin and those

- predicted to be present at a set time in the future) through a combination of targeted desk-based study and field survey work to determine the relevant baseline conditions.
- ii. The importance of the identified ecological features is evaluated, placing their relative biodiversity and nature conservation value into geographic context, which is then used to define the relevant ecological features that need to be considered further.
 - iii. The changes or perturbations predicted to result as a consequence of the Project (i.e. the potential impacts) and which could potentially affect relevant ecological features are identified and their nature described. Established best-practice, legislative requirements or other incorporated design measures to minimise or avoid impacts are also described and are taken into account.
 - iv. The likely significant effects (beneficial or adverse) on relevant ecological features are then assessed, and where possible quantified.
 - v. Measures to avoid or reduce any likely significant effects, if possible, are then developed in conjunction with other elements of the design (including mitigation for other environmental disciplines) and if necessary, measures to compensate for likely significant effects on features of nature conservation importance are also included.
 - vi. The residual effects of the Project are reported.
 - vii. Scope for ecological enhancement is considered.

Sensitivity/Value of Ecological Features

- 4.4.15 The CIEEM guidelines (Ref 2) make clear that there is no need to “*carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable*”. Therefore, it is not necessary for the assessment to address all habitats and species with potential to occur in the relevant Study Area and instead the focus is on those that are “relevant” i.e. ecological features that are considered to be important and potentially affected by the Project. This does not mean that efforts will not be made to safeguard wider biodiversity.
- 4.4.16 To support a focussed assessment, there is a need to determine the scale of importance of the relevant ecological features identified through the desk studies and field surveys undertaken for the Project. The importance of each relevant ecological feature has been defined with reference to the geographical level of relevance to that feature.
- 4.4.17 The frames of reference that will be used for the assessment, based on Section 4.7 of the CIEEM guidelines (Ref 2) are:
- i. International (i.e. Ramsar Sites, SACs and SPAs) (normally within the geographic area of Europe);
 - ii. UK or national (Great Britain, but considering the potential for certain ecological features to be more notable (of higher value) in England, with context relative to Great Britain as a whole);
 - iii. Regional (East Midlands and East Anglia);
 - iv. County (Cambridgeshire, Lincolnshire and Norfolk);

- v. District (town or parish area e.g. Bilsby, Holland Fen with Brothertoft);
- vi. Local (ecological features that do not meet criteria for valuation at a District or higher level, but that have sufficient value to merit retention or mitigation); and
- vii. Negligible (common and widespread ecological features of such low priority that they do not require retention or mitigation at the relevant location to otherwise maintain a favourable nature conservation status).

- 4.4.18 The importance of species populations is determined on the basis of their size, recognised status (such as recognised through published lists of species of conservation concern and designation of local Biodiversity Action Plan (BAP) status) and legal protection. For example, bird populations exceeding 1 per cent of published information on biogeographic populations are considered to be of international importance, those exceeding 1 per cent of published data for national populations are considered to be of national importance.
- 4.4.19 In assigning importance to species populations, while the status of the species in terms of any legal protection is considered, it is also important to consider other factors such as its distribution, rarity, population trends and the size of the population which would be affected. For example, whilst great crested newt is afforded protection under the relevant legislation and therefore conservation of the species is of significance at the international level, this does not mean that every great crested newt population is internationally important. It is important to consider the particular population in its context. The assessments of importance rely on the professional opinion and judgment of suitably experienced ecologists.
- 4.4.20 Plant communities will be assessed both in terms of their intrinsic importance and as habitat for protected species whose habitat is also specifically protected and for species of nature conservation concern which are particularly associated with them.
- 4.4.21 Due regard will also be paid to the legal protection afforded to species during the development of mitigation and compensation measures to be implemented for the Project. For European Protected Species there is a requirement that the Project should not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- 4.4.22 Assessing the value of features requires consideration of both existing and future predicted baseline conditions. Therefore, the description and valuation of ecological features takes account of any likely changes, such as trends in the population size or distribution of species, likely changes to the extent of habitats and the effects of other proposed developments or land use changes.
- 4.4.23 All ecological features of local importance and above, where there is the potential for the Project to impact them directly or indirectly, are taken forward to impact assessment and will be the 'relevant ecological features' for the purposes of the completed EclA.
- 4.4.24 At this preliminary stage of the assessment, an initial assessment of the sensitivity/value of ecological features has been undertaken and is reported within the **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 4 Ecology and Biodiversity**. On a precautionary basis, the Supplementary PEI Report assumes where information about a particular receptor is incomplete or uncertain, then significant effects cannot be excluded. Therefore, at this stage, most of the ecological receptors identified in the baseline of this Supplementary PEI Report have been retained in the assessment, noting that once all survey data has been collated,

it is likely that the status of these receptors will change. Field survey work within the Section 5 Survey Area will conclude in 2026, the findings of which will inform further assessment of the value/sensitivity of the ecological features, which will be reported within the ES.

Impacts and Effects

- 4.4.25 In line with Section 1.21 of the CIEEM guidelines (Ref 2), the terminology used within the EclA draws a clear distinction between the terms ‘impact’ and ‘effect’. For the purposes of this EclA these terms are defined as follows:
- i. impact – actions resulting in changes to an ecological feature. For example, construction activities of a development removing a hedgerow; and
 - ii. effect – outcome resulting from impact acting upon the conservation status or structure and function of an ecological feature, e.g. the effects on a population of bats as a result of the loss of a bat roost.
- 4.4.26 When describing potential impacts (and where relevant, the resultant effects) consideration is given to the following characteristics likely to influence this:
- i. positive or negative (beneficial or adverse) – i.e. is the change likely to be in accordance with nature conservation objectives and policy and is that change:
 - positive (beneficial) – a change that improves the quality of the environment, or halts or slows an existing decline in quality e.g. increasing the extent of a habitat of conservation value; or
 - negative (adverse) – a change that reduces the quality of the environment e.g. destruction of habitat.
 - ii. spatial extent – the spatial or geographical area or distance over which the impact or effect may occur under a suitably representative range of conditions;
 - iii. magnitude – the ‘size’, ‘amount’ or ‘intensity’ and ‘volume’ of an impact – this is described on a quantitative basis where possible;
 - iv. duration – the time over which an impact is expected to last prior to recovery or replacement of the resource or feature. Consideration has been given to how this duration relates to relevant ecological characteristics such as a species’ lifecycle. However, it is not always appropriate to report the duration of impacts in these terms. The duration of an effect may be longer than the duration of an activity or impact;
 - v. timing and frequency – i.e. consideration of the point at which the impact occurs in relation to critical life-stages or seasons; and
 - vi. reversibility – i.e. is the impact temporary or permanent. A temporary impact is one from which recovery is possible or for which effective mitigation is both possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).
- 4.4.27 It is noted that due to the preliminary nature of the assessment reported within the Supplementary PEI Report, that it is not yet viable to fully determine the above characteristics of the likely impacts of the Project upon the identified ecological features. This is given ongoing field survey works to establish the baseline habitats and species which are present within the Survey Area and which are therefore likely

to be impacted during construction or operation and maintenance. The survey results will be used to inform further assessment in accordance with the CIEEM guidelines and the design of any appropriate additional mitigation measures, which will be presented within the ES.

- 4.4.28 Cumulative effects result from the combined impacts of multiple developments on a receptor, as well as ‘in-combination’ intra-project effects, for example, combined noise and lighting impacts on the same sensitive receptor. The approach and methodology for the assessment of cumulative effects is outlined in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information** and **Supplementary PEI Report Volume 3 Part A Appendix 4C Cumulative Effects Assessment Methodology**. The cumulative effects assessment is reported in **Supplementary PEI Report Volume 2 Part C Chapter 9 Cumulative Effects**.

Significance of Effects

- 4.4.29 For each ecological feature only those characteristics relevant to understanding the ecological effect of the Project and determining the significance are described. The determination of the significance of effects will be made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:
- i. not significant – no effect on structure and function, or conservation status; and
 - ii. significant – structure and function, or conservation status is affected.
- 4.4.30 Sections 5.24 to 5.28 of the CIEEM guidelines (Ref 2) state that effects should be determined as being significant when “an effect either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local. A significant effect is an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. In broad terms, significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)”.
- 4.4.31 Using this information and judgment, it is determined whether the effects will be significant or not on the structure and integrity (of site or ecosystems) or conservation status (of habitats and or species) of each ecological feature and the effect significance is determined at the appropriate geographical scale.
- 4.4.32 There are a number of approaches for determining the significance of effects on ecological features. Whilst the CIEEM guidelines (Ref 2) recommends the avoidance of the use of the matrix approach for categorisation (major, moderate and minor), in order to provide consistency of terminology within the Environmental Statement, as presented in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**, the findings of the CIEEM assessment will be translated into the classification of effects scale, as outlined in **Table 4.3**, but still remain consistent with the CIEEM guidelines. As a rule, major and moderate effects are considered to be significant, whilst minor and neutral/negligible effects are considered to be not significant. However, professional judgement will also be

applied when concluding whether an effect is significant or not, including taking account of whether the effect is permanent or temporary, its duration and frequency, whether it is reversible, and/or its likelihood of occurrence.

Table 4.3 Relating CIEEM assessment terms to those used in Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information

Effect classification terminology used in Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information	Equivalent CIEEM assessment
Major beneficial	Beneficial effect on structure/function or conservation status at regional, national or international level.
Moderate beneficial	Beneficial effect on structure/function or conservation status at county and district level.
Minor beneficial	Beneficial effect on structure/function or conservation status at local level.
Neutral/negligible	No effect on structure/function or conservation status.
Minor adverse	Adverse effect on structure/function or conservation status at local level.
Moderate adverse	Adverse effect on structure/function or conservation status at county and district level.
Major adverse	Adverse effect on structure/function or conservation status at regional, national or international level.

- 4.4.33 It is noted that due to the preliminary nature of the assessment reported within the Supplementary PEI Report, that it is not yet viable to classify the scale of effects upon the identified ecological features. This is given ongoing survey works to establish the baseline habitats and species which are present within the Survey Area and which are therefore likely to be impacted during construction or operation and maintenance. At this stage, on a precautionary basis, the Supplementary PEI Report identifies where significant effects cannot be ruled out. The final assessment of effects reported within the ES will be informed by the field survey findings and the confirmed control and mitigation measures to be implemented.

Supporting Assessments

- 4.4.34 The Ecology and Biodiversity Chapter of the ES will be supported by the following assessments. Where appropriate, the scope of these assessments will be discussed with the relevant stakeholders.

Biodiversity Net Gain

- 4.4.35 A BNG assessment will be undertaken using the Statutory Biodiversity Metric (Ref 6) in accordance with the accompanying guidance and best practice principles. The UKHab classification and habitat condition scoring, including the results of watercourse condition surveys, will inform the assessment of the BNG baseline within the Metric. The Project is committed to delivering BNG for the onshore elements as previously highlighted during scoping. It is anticipated that BNG delivery will become mandatory under the Environment Act 2021 (which requires a 10 per cent increase from the baseline) for DCO applications from November 2025. UKHab surveys and BNG unit calculations are ongoing following a staged approach to assessment in order to inform the design and discussions on ecological compensation in line with the Biodiversity Gain Hierarchy. However, it is acknowledged that the government's consultation on this element has not yet commenced and therefore the approach to BNG assessment and delivery will be kept under review and the final BNG approach for the Project will be revised in line with the latest guidance.

Habitat Regulations Assessment

- 4.4.36 A Habitats Regulations Assessment (HRA) is also required for the Project. A HRA refers to the four stages of Assessment which must be undertaken by a Competent Authority, in accordance with the Conservation of Habitats and Species Regulations 2017 and the Conservation of Offshore Marine Habitats and Species Regulations 2017, to determine if a plan or project may affect the protected features of a European designated site. HRA must be completed before deciding whether to undertake, permit or authorise the relevant plan or project. In the case of the Grimsby to Walpole Project, the Competent Authority is the Secretary of State for the Department for Energy Security and Net Zero (DESNZ)).
- 4.4.37 National Grid will initially prepare a HRA Screening Report (Stage 1) to inform consultation with Natural England and other relevant consultees. The aims of HRA Screening Report will be to identify whether the Project would result in likely significant effects on the qualifying interest features of European sites, and to subsequently inform the need for a Stage 2 appropriate assessment.
- 4.4.38 At this preliminary stage of assessment, HRA Screening for the Project has not yet been completed. This is primarily due to the ongoing survey activities, given that ornithology data in particular is a key input to the HRA Screening process for the Project. Therefore, a HRA Screening report is not included as part of the Supplementary PEI Report. An initial high level appraisal of potential impacts upon European designated sites is instead presented within **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 4 Ecology and Biodiversity**, and within **Supplementary PEI Report Volume 2 Part C Chapter 2 Ecology and Biodiversity**.
- 4.4.39 Following the completion of the HRA Screening Report (Stage 1), which is planned to be finalised in 2025, it is anticipated that National Grid will be required to prepare a Report to Inform HRA (RIHRA). This will provide relevant information for the Competent Authority to undertake their Appropriate Assessment. Specifically, the RIHRA will assess the potential for Adverse Effects on the Integrity (AEoI) of European Sites, where these cannot be ruled out at the HRA Screening stage, either alone and/or in-combination with other projects. Development of the RIHRA will be an iterative process informed by consultation with the relevant statutory bodies.

- 4.4.40 The methodologies following during completion of both the HRA Screening Report and the RIHRA will be completed with reference to relevant best practice guidance, including:
- i. Department of Energy and Climate Change (DECC) (2021). Changes to the Habitats Regulations 2017;
 - ii. Department of Communities and Local Government (DCLG) (2006). Guidance on 'Planning for the Protection of European Sites: Appropriate Assessment';
 - iii. Department of Energy and Climate Change (DECC) (2015). Guidelines on the Assessment of Transboundary Impacts of Energy Developments on Natura 2000 Sites Outside the UK;
 - iv. European Commission (2001). Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC;
 - v. European Commission (2011). Guidance Document on Wind Energy Developments and Natura 2000; and
 - vi. European Commission (2018). Managing Natura 2000 sites. The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.
- 4.4.41 The HRA Screening Report and RIHRA will both be submitted in support of the DCO Application.

4.5 Assessment Assumptions and Limitations

- 4.5.1 The following limitations and assumptions have been identified for the assessment.

Assumptions

- 4.5.2 It is assumed that:
- i. The following habitats will be retained as part of the Project where possible: Habitats of Principal Importance (HPIs), woodlands, ponds, watercourses (assuming watercourses are not lost as a whole and that overhead lines will cross over watercourses) and the majority of hedgerows (assuming hedgerows are not lost as a whole, but some individual hedgerows could require creation of either a temporary or permanent gap to facilitate the haul road, the extent of which would be minimised as far as practicable);
 - ii. It is also assumed that overhead line, underground cable and temporary access crossings will cross watercourses. Where temporary crossings of watercourses are required to facilitate access, it is assumed that these will generally be via closed culverts, single span bridge and/or diversions;
 - iii. It is assumed as a reasonable worst case that existing field drainage ditches which are within the footprint of the proposed new substations may require stopping up. However potential diversion and integration with the wider drainage network remains under consideration;
 - iv. Works within the boundaries of designated sites and areas of ancient woodland will be avoided as far as possible; and

- v. Suitable areas within the draft Order Limits will be made available to deliver necessary measures (e.g. compensatory habitat), should there be a requirement for the potential mitigation of ecological features.

Limitations

- i. This Supplementary PEI Report is based primarily on data collected to date during the desk study and field surveys;
- ii. Land access for baseline surveys has been (and may continue to be) restricted;
- iii. A precautionary approach has been taken to predicting the most likely habitats and any protected or notable species they support. This approach has been informed by existing desk study data and aerial imagery;
- iv. Baseline surveys are still being completed to overcome these limitations and specific limitations for each survey type will be detailed in the relevant baseline reports (to be included within the ES);
- v. As further survey data becomes available it is likely that the precautionary approach can be revised, and potentially significant impacts can be downgraded within the full EIA as appropriate; and
- vi. As described in section 4.4, at this preliminary stage of the assessment, it is not viable to confirm the value/sensitivity of ecological features within the scope of the Ecology and Biodiversity Assessment, the magnitude and characteristics of impacts and therefore the classification of effects and their significance. These elements of the assessment will be reported within the ES.

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5. Historic Environment

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5. Historic Environment

5.1 Overview

- 5.1.1 This Appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Historic Environment assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.

5.2 Guidance specific to Historic Environment assessment

- 5.2.1 The preliminary assessment for Historic Environment has been undertaken in accordance with the following good practice and guidance documents:
- i. Planning Practice Guidance: Historic Environment (Ref 2);
 - ii. Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment. Historic England (Ref 3);
 - iii. Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets. Historic England (2nd edition, 2017) (Ref 4);
 - iv. Historic Environment Statement of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12. Historic England (Ref 5);
 - v. Chartered Institute for Archaeologists (CIfA) Standard and Guidance for Historic Environment Desk-Based Assessment (Ref 6);
 - vi. CIfA Code of Conduct: professional ethics in archaeology (Ref 7);
 - vii. Institute of Environmental Management and Assessment (IEMA), the Institute of Historic Building Conservation (IHBC) and the Chartered Institute for Archaeologists (CIfA), Principles of Cultural Heritage Impact Assessment in the UK (Ref 8);
 - viii. The Lincolnshire County Council Archaeology Handbook 2024 (Ref 9); and
 - ix. Standards for development-led archaeological projects in Norfolk (Ref 10).

5.3 Data Sources

- 5.3.1 The following data sources have been used to inform the baseline conditions for the Historic Environment preliminary assessment:
- i. the National Heritage List for England (NHLE), held by Historic England, for designated assets;

- ii. North East Lincolnshire, Lincolnshire, Cambridgeshire and Norfolk Historic Environment Records (HER) for non-designated heritage assets (HER data received between 16 and 29 May 2024);
- iii. Historic Landscape Characterisation (HLC) mapping undertaken by local planning authorities;
- iv. Geological mapping held by the British Geological Survey (BGS); and
- v. Various online sources including:
 - Historic Ordnance Survey maps held by the National Library of Scotland;
 - Historic England's Aerial Archaeology Mapping Explorer; and
 - Local authority conservation area appraisal and management documents and their mapping.

5.4 Approach to Historic Environment Assessment

Scope of Assessment

- 5.4.1 The scope of the assessment is informed by the Scoping Opinion (Ref 11) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the Environmental Impact Assessment (EIA) Scoping Report (Ref 12). The scope is also informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Historic Environment chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**. A summary of the stakeholder engagement undertaken to date is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4D Summary of Stakeholder Engagement**.
- 5.4.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 13). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 5.4.3 The scope of the construction assessment covers the following heritage assets:
 - i. Designated heritage assets (scheduled monuments, listed buildings, conservation areas and registered parks and gardens, noting that no World Heritage Sites or registered battlefields are located within the draft Order Limits or surrounding Study Areas defined for the Project); and
 - ii. Non-designated heritage assets (e.g. buried archaeological remains, earthwork remains, non-designated historic buildings and structures, non-designated historic parks and gardens, tracks/routeways and artefact scatters).
- 5.4.4 The scope of the operation assessment covers the following heritage assets:
 - i. Designated heritage assets (scheduled monuments, listed buildings, conservation areas and registered parks and gardens, noting that no World Heritage Sites or registered battlefields are located within the draft Order Limits or surrounding Study Areas defined for the Project); and

- ii. Non-designated heritage assets (e.g. earthwork remains, non-designated historic buildings and structures, non-designated historic parks and gardens and tracks/routeways).

Study Area

5.4.5 The preliminary assessment for the Historic Environment uses the following Study Areas which provide a proportionate approach to the identification of heritage assets that may be affected by the Project:

- i. For non-designated heritage assets, a core Study Area extending 1 km from the draft Order Limits has been defined. Taking into account the guidance in paragraph 5.9.7 EN-1, (Ref 14) which states that impacts on non-designated heritage assets are to be included where they merit consideration, this study area is proportionate to provide a contextual baseline identifying recorded non-designated heritage assets which could merit such consideration. The non-designated assets within the 1 km Study Area would inform on the likelihood of encountering previously unknown archaeological remains within the draft Order Limits and includes a preliminary assessment of the likelihood of impacts on these assets and their settings;
- ii. For designated heritage assets an extended Study Area of up to 3 km from the draft Order Limits is used due to the greater potential for the setting of these heritage assets to extend over a larger area where the wider landscape may form a key contributing factor to their value (heritage significance); and
- iii. For designated heritage assets of high value (scheduled monuments, grade I and II* listed buildings and grade I and II* registered parks and gardens) a wider Study Area extending 5 km from the draft Order Limits is used to identify where setting is a key factor in their value and where this setting extends over a large area.

5.4.6 Designated heritage assets within the extended 3 km and 5 km Study Areas have been identified and assessed for their potential to be affected by the Project. Those assets that are identified to be potentially impacted have then be assessed further in the ES. The assessment considers the value of the asset, its setting and sensitivity to change. Through such an assessment, assets having a greater influence over the wider landscape may be taken through to assessment, whilst those having a lesser influence may be omitted. This staged approach is consistent with current Historic England guidance (Ref 5).

Designated heritage assets of high value (scheduled monuments, grade I and II* listed buildings and grade I and II* registered parks and gardens) located beyond the 5 km Study Area have been assessed where there is potential for their setting to be impacted by the Project. The selection of designated heritage assets beyond the 5 km Study Area has been undertaken using professional judgement and in consideration of heritage assets highlighted by stakeholders.

Assessment Methodology

Establishing Heritage Asset Value

5.4.7 The value of a heritage asset (its heritage significance) is guided by its designated status but is derived also from its heritage interest which may be archaeological,

architectural, artistic, or historic (NPPF Annex 2, Glossary – as referred to in paragraph 5.9.3 of EN-1) (Ref 14). Each identified heritage asset can be assigned a value in accordance with the criteria set out in **Table 5.1**.

- 5.4.8 Using professional judgement and the results of consultation, heritage assets are also assessed on an individual basis and regional variations and individual qualities are considered where applicable.

Table 5.1 Criteria for assessing the value of heritage assets

Value	General Criteria
High	<p>World Heritage Sites</p> <p>Scheduled Monuments.</p> <p>Grade I and II* listed buildings.</p> <p>Registered battlefields.</p> <p>Grade I and II* registered parks and gardens.</p> <p>Conservation areas of demonstrable high value.</p> <p>Non-designated heritage assets (archaeological sites, historic buildings, monuments, parks, gardens, or landscapes), or grade II listed buildings, that can be shown to have demonstrable national or international importance.</p> <p>Well preserved historic landscape character areas, exhibiting considerable coherence, time-depth, or other critical factor(s).</p>
Medium	<p>Grade II listed buildings.</p> <p>Grade II registered parks and gardens.</p> <p>Conservation areas.</p> <p>Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens, or landscapes), or locally listed buildings, that can be shown to have demonstrable regional importance.</p> <p>Averagely preserved historic landscape character areas, exhibiting reasonable coherence, time-depth, or other critical factor(s).</p> <p>Historic townscapes with historic integrity in that the assets that constitute their make-up are clearly legible.</p>
Low	<p>Locally listed buildings.</p> <p>Non-designated heritage assets (archaeological sites, historic buildings, monuments, park, gardens, or landscapes) that can be shown to have demonstrable local importance.</p> <p>Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade.</p> <p>Historic landscape character areas whose value is limited by poor preservation and/or poor survival of contextual associations.</p>
Negligible	<p>Assets identified on national or regional databases, but which have no archaeological, architectural, artistic, or historic value.</p> <p>Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade.</p> <p>Landscape with no or little significant historical merit.</p>

Predicting Magnitude of Impact

- 5.4.9 Having identified the value of the heritage asset, the next stage in the assessment is to identify the level and degree of impact to a heritage asset arising from the Project. Impacts may arise during construction, operation or maintenance and can be temporary or permanent. Impacts can affect the physical fabric of the asset or affect its setting.
- 5.4.10 Whilst the long-term permanency of the built infrastructure for the Project remains for its operational lifetime, the impact upon the setting of heritage assets is immediate from the point of construction rather than from when the Project becomes operational. Impacts on setting resulting from the physical form of the infrastructure in the landscape are therefore assessed under construction, whereas those impacts resulting from the ongoing operation of the Project such as noise and lighting are assessed under the operational phase.
- 5.4.11 The level and degree of impact (impact rating) is assigned with reference to a four-point scale as set out in **Table 5.2**. In respect of the Historic Environment an assessment of the level and degree of impact is made in consideration of any scheme design mitigation (embedded mitigation). If no impact on value is identified, no impact rating is given and no resulting effect reported.

Table 5.2 Factors influencing the assessment of magnitude of impacts

Magnitude	General Criteria
Large	Changes such that the heritage value of the asset is totally altered or destroyed. Comprehensive change to elements of setting that would result in harm to the asset and our ability to understand and appreciate its heritage significance.
Medium	Change such that the heritage value of the asset is significantly altered or modified. Changes such that the setting of the asset is noticeably different, affecting significance and resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Small	Changes such that the heritage value of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Negligible	Changes to the asset that hardly affect heritage value. Changes to the setting of an asset that have little effect on significance and no real change in our ability to understand and appreciate the heritage value of the asset.
No Change	No alteration or change to the value of the asset or its setting.

Establishing the Significance of Effects

- 5.4.12 An assessment to classify the effect, having taken into consideration any embedded mitigation, is determined using the matrix at **Table 5.3**, which takes account of the

value of the asset (**Table 5.1**) and the magnitude of impact (**Table 5.2**). Effects can be neutral, adverse, or beneficial.

Table 5.3 Assessment of effect

Magnitude of Impact	Asset value			
	High	Medium	Low	Negligible
Large	Major	Major	Moderate	Minor/negligible
Medium	Major	Moderate	Minor	Negligible
Small	Moderate	Minor	Negligible	Negligible
Negligible	Minor/negligible	Negligible	Negligible	Negligible
No Change	Neutral	Neutral	Neutral	Neutral

5.4.13 This Supplementary PEI Report, the previously submitted June 2025 PEI Report and the subsequent Environmental Statement (ES) will report on the significance of effect in accordance with EIA methodology. Major and moderate effects are considered to be significant, whilst minor and negligible effects are considered to be not significant. Professional judgement have be applied in reaching conclusions as to the significance of effects.

5.4.14 Within the National Policy Planning Framework (Ref 15), impacts affecting the value of heritage assets are considered in terms of harm and there is a requirement for the decision maker to determine whether the level of harm amounts to ‘substantial harm’ or ‘less than substantial harm’. This is also supported by section 5.9.28 of the Overarching National Policy Statement for Energy (EN-1) (Ref 14) which directs the Secretary of State to give considerable importance and weight to the desirability of preserving all heritage assets, with any harm or loss of value (heritage significance) of a designated heritage asset (including as a result of development within its setting) requiring clear and convincing justification. Section 5.9.36 outlines that the Secretary of State should give appropriate weight to the desirability of preserving the setting of heritage assets and should treat favourably applications that preserve those elements of the setting that make a positive contribution to a heritage asset (or better reveal its value (heritage significance)).

5.5 Assessment Assumptions and Limitations

5.5.1 The assessment has been undertaken based on preliminary Project design information. This information is iterative and will be updated in the ES as the design evolves and changes are made.

5.5.2 All general assumptions and limitations for the topic are listed below:

- i. A detailed desk-based assessment will be prepared to inform the ES. This preliminary assessment is informed by research and geophysical surveys completed at the time of writing (as described in section 5.1.7). Baseline conditions for each route section are set out within each **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 5 Historic Environment** and June

- ii. The preliminary assessment reported has relied upon data and records provided by third parties, and therefore it has been assumed that this information is accurate and up to date at the time of reporting;
- iii. The preliminary assessment has been undertaken using the design information available and the maximum likely extents of land required for its construction, operation and maintenance (i.e. the draft Order Limits);
- iv. Only limited areas of the draft Order Limits have been subject to archaeological walkover survey and initial setting assessment at the time of writing. Detailed walkover surveys and setting assessments will be completed to inform the ES.
- v. Locally listed assets where these are available, over and above those recorded on the Historic Environment Records (HER), will be assessed at ES stage;
- vi. The following data was not available at the time of writing this Supplementary PEI Report but will be included within the ES;
 - Documentary research (including a map regression exercise);
 - Aerial photographic and LiDAR assessment;
 - The results of route-wide geophysical surveys (including pylon works areas, construction access, construction compounds and intrusive ecological and landscape mitigation) extending beyond the proposed substation locations (currently planned for autumn 2025 to early 2026); and
 - Archaeological trial trench evaluation results (currently planned for spring/summer 2026).
- vii. Geophysical surveys of the Weston Marsh A and B substation sites are due to be undertaken in the autumn 2025. A phased programme of route-wide geophysical surveys for pylon works areas, construction access, construction compounds and intrusive ecological and landscape mitigation is also being undertaken and is due to be completed in spring 2026. The results of these surveys will inform the scope of intrusive trial trench and geoarchaeological evaluation required to inform the assessment presented in the ES;
- viii. The decommissioning (in full or part) of the existing Grimsby West Substation has not been assessed in the Supplementary PEI Report or the previously published June 2025 PEI Report, but will be assessed at ES stage;
- ix. The Zone of Theoretical Visibility (ZTV) has been prepared to inform the Landscape and Visual assessments for the Supplementary PEI Report and consider any area where a pylon may be visible as falling within the ZTV. Therefore, they are of limited use to the Heritage assessment due to most areas falling within the ZTV, including those areas where there may be very minor visibility of the Project that would not result in Heritage impacts through change to setting. Therefore, the ZTVs have not been applied to inform the Heritage assessments presented in the Supplementary PEI Report or the previously submitted June 2025 PEI Report. For the assessment to be presented in the ES, the application of Heritage specific ZTVs will be considered in consultation with heritage stakeholders. Any limitations of the applicability of these ZTVs will be stated within the ES;

- x. A number of indicative areas for temporary highway improvements are included within the draft Order Limits but are detached from the corridor containing the overhead line alignment, as shown on **Supplementary PEI Report Volume 2 Part B Chapter 1 Figure 1.2 Temporary and Construction Features** and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 1 Figure 1.2 Temporary and Construction Features (Ref 1). The temporary highway improvements works will be assessed for the ES when further information is available. As such, they are not assessed within the Supplementary PEI Report or June 2025 PEI Report; and
- xi. Impacts generated by the Project such as noise, lighting, traffic and dust will be reviewed to further inform and refine assessments for the ES, with assessments for the Supplementary PEI Report and previously published June 2025 PEI Report undertaken on worse-case scenario assumptions.

5.5.3 These key parameters and assumptions will be reviewed based on the design presented in the Development Consent Order (DCO) application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.

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6. Water Environment and Flood Risk

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6. Water Environment and Flood Risk

6.1 Overview

- 6.1.1 This Appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Water Environment and Flood Risk assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, value of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.

6.2 Guidance Specific to Water Environment and Flood Risk Assessment

- 6.2.1 Relevant guidance and standards that have informed the Supplementary PEI Report are those listed below (but not limited to). These will also be taken into account as part of the assessment reported within the ES:
- i. Planning Inspectorate Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive (Ref 2);
 - ii. Environment Agency's 'Clearing the Waters for All'(Ref 3);
 - iii. Local flood risk management guidelines published by the Lead Local Flood Authorities (LLFAs) (various dates);
 - iv. Planning Practice Guidance (PPG) to the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change (Ref 4);
 - v. Flood Risk Assessments: Climate Change Allowances (Ref 5);
 - vi. Various Construction Industry Research and Information Association (CIRIA) publications (various dates) that provide construction good practice for preventing pollution of the water environment, for example, C532: Control of water pollution from construction sites;
 - vii. National Highways Design Manual for Roads and Bridges (DMRB) LA104 (Ref 6);
 - viii. National Highways Design Manual for Roads and Bridges (DMRB) LA113 (Ref 7); and
 - ix. Guidance for Pollution Prevention series (various dates).
- 6.2.2 Industry-standard best practice guidance will be followed when drafting the method statements, material uses and drainage strategy for the Project. These include, but are not limited to:
- i. CIRIA C532: Control of Water Pollution from Construction Sites (Ref 8);
 - ii. CIRIA C741: Environmental Good Practice on Site Guide (Ref 9);

- iii. Pollution prevention for businesses (Ref 10);
- iv. Report an environmental incident (Ref 11);
- v. Discharges to surface water and groundwater: environmental permits (Ref 12);
- vi. Work on a river, flood defence or sea defence (Ref 13); and
- vii. Manage water on land: guidance for land managers (Ref 14).

6.3 Data Sources

- 6.3.1 At this stage, the Water Environment and Flood Risk baseline has been developed on the basis of a desk-based assessment of existing data, as summarised in **Table 6.1**. A site walkover was undertaken in summer 2025 to supplement the data described below and inform the assessment reported in the ES. The understanding obtained from the baseline data will be supplemented by subsequent consultation with relevant water and flood risk stakeholders. The baseline characterisation will therefore be refined where appropriate as data becomes available and as the details of the design are developed. EA flood model outputs (including flood extent and flood depth data) have been reviewed for the floodplains that are proposed to be crossed by the Project infrastructure.
- 6.3.2 The known or predicted current and future baseline environment described in **Supplementary PEI Report Volume 2 Part B Chapter 6 Water Environment and Flood Risk** have been informed by the data sources listed in **Table 6.1**.
- 6.3.3 The Flood Map for Planning was updated in March 2025 to represent the latest available data arising from the Environment Agency's updated National Flood Risk Assessment (Ref 15). This is not reflected within this Supplementary PEI Report and the screening exercise presented in the Preliminary Flood Risk Assessment (PFRA) (**Supplementary PEI Report Volume 3 Part C Appendix 4A Preliminary Flood Risk Assessment**), but will inform the updated assessment reported in the ES, including the FRA submitted in support of the DCO application for the Project.

Table 6.1 Data sources used to inform baseline conditions

Data topic	Sources of information
Climate	Met Office UK Climate averages (Ref 16)
Topography	Ordnance Survey Mapping (Ref 17)
Geology	British Geological Survey (BGS) Geology of Britain Viewer (Ref 18)
Soils and land use	Department for Environment, Food and Rural Affairs (DEFRA) Multi-Agency Geographic Information for the Countryside (Magic Map) online GIS portal (Ref 19); National Soil Research Institute Soilscales map viewer (Ref 20)
Hydrology	Environment Agency Statutory Main River Map for England (Ref 21) Flood Estimation Handbook Web Service (Ref 22)
Flood risk	Environment Agency Flood Map for Planning (Ref 23)

Data topic	Sources of information
	Environment Agency Risk of Flooding from Surface Water (RoFSW) (Ref 24) National Flood Risk Assessment (NAFRA) Dataset (Ref 25) Environment Agency Risk of Flooding from Reservoirs (Ref 26) Environment Agency Flood Defence Asset database (Ref 27) National River Flow Archive (NRFA) (Ref 15)
Water quality and Water Framework Directive status	Catchment Data Explorer database (Ref 28) of Cycle 2 and 3 WFD information
Water abstractions and discharge consents	Environment Agency abstraction and discharge consent data including active discharge locations, abstraction licence strategies and local authority private water supply datasets (Ref 29)

Survey Work

- 6.3.4 Site walkover surveys were conducted in summer 2025 with a view to informing the ES. Observations from the surveys were recorded to inform both design development and environmental assessments.
- 6.3.5 The following data were not available at the time of writing this Supplementary PEI Report but will be available to inform the ES:
- Aquatic ecology surveys, including:
 - General characteristics of watercourses to be crossed, including physical features such as length, depth, width, flow, water level, bed and bank substrate and bankside and in-channel vegetation cover;
 - Aquatic habitat appraisal surveys and assessments; and
 - Appraisal of potential for protected and notable species typically associated with watercourse habitats.

Additional Data to be collected to inform the ES

- 6.3.6 To support the Water Environment and Flood Risk assessment presented in the ES, engagement is ongoing with LLFAs and Internal Drainage Boards (IDBs) to confirm and clarify interactions associated with watercourses under their maintenance.

6.4 Approach to Water Environment and Flood Risk assessment

Scope of the Assessment

- 6.4.1 The scope of the assessment is based on a review of baseline information and will be confirmed through review of additional data sources, site visit and further consultation with relevant stakeholders post Supplementary PEI Report submission. As proposed in the Scoping Report (Ref 30) and agreed via the Scoping Opinion (Ref

31), **Table 6.2** identifies receptors and stages of the Project which are scoped in to the EIA.

Table 6.2 Scope of the assessment

Receptor	Relevant Assessment Criteria	Potential Effects Considered
Construction Phase		
Aquatic environment receptors , comprising: - Main rivers - WFD river and transitional waterbodies - IDB-maintained watercourses - Ordinary watercourses Water resource receptors , comprising: - Licensed surface water abstractions - Unlicensed surface water abstractions for private water supply - Discharges to surface waters	WFD and WFD (Standards and Classification) Directions (England and Wales) 2015 (Ref 32).	<ul style="list-style-type: none"> • Deterioration in the water quality of aquatic environment receptors via generation of sediment laden run-off as a result of construction activities, e.g. watercourse crossings and excavations. • Potential effects on the hydromorphology and flow conveyance as a result of increased sediment inputs or direct watercourse disturbance (including from new watercourse crossings). • Deterioration in the water quality of aquatic environment receptors affected by mobilisation of contaminants from contaminated soil, or accidental spillage of pollutants (e.g. fuel or oil). • The potential effects noted above for surface water aquatic environment receptors could also have implications for surface water resource availability.
Flood risk receptors (property and infrastructure at risk of flooding)	NPPF (Ref 33)	<ul style="list-style-type: none"> • Changes to watercourse flow conveyance arising from the presence of new or modified temporary watercourse crossings. This has the potential not only to affect the morphology of aquatic environment receptors, but to increase the risk of flooding to flood risk receptors. • Changes to surface water flood risk due to changes in runoff rates resulting from ground disturbance and creation of impermeable surfaces, and to changes in surface water runoff pathways due to changes in ground surface levels.

Receptor	Relevant Assessment Criteria	Potential Effects Considered
		<ul style="list-style-type: none"> Changes to fluvial flood risk associated with loss of floodplain storage and/or change in floodplain flow conveyance. Changes to fluvial flood risk associated with compartmentalisation of the floodplain. Impacts on the integrity of flood defence and land drainage infrastructure as a result of physical impingement of Project infrastructure.
Operational Phase		
Aquatic environment receptors , comprising: <ul style="list-style-type: none"> - Main rivers - WFD river and transitional waterbodies - IDB-maintained watercourses - Ordinary watercourses 	WFD and WFD (Standards and Classification) Directions (England and Wales) 2015 (Ref 32)	<ul style="list-style-type: none"> Deterioration in the water quality of aquatic environment receptors due to a spill or leakage of fuels/chemicals during periodic maintenance and refurb activities. These activities are unlikely to require heavy plant, or excavations or the need to construct new temporary access roads. The potential effects noted above for surface water aquatic environment receptors could also have implications for surface water resource availability.
Water resource receptors , comprising: <ul style="list-style-type: none"> - Licensed surface water abstractions - Unlicensed surface water abstractions for private water supply - Discharges to surface waters 		
Flood risk receptors (property and infrastructure at risk of flooding)	NPPF (Ref 33)	<ul style="list-style-type: none"> Changes to surface water flood risk due to changes in runoff rates resulting from ground disturbance and creation of impermeable surfaces, and to changes in surface water runoff pathways due to changes in ground surface levels. Changes to fluvial flood risk associated with loss of floodplain

Receptor	Relevant Assessment Criteria	Potential Effects Considered
		storage and/or change in floodplain flow conveyance.
6.4.2	As set out within Table 6.2 , three broad classes of receptors are defined for the purposes of this assessment: <ul style="list-style-type: none"> i. aquatic environment; ii. water resources; and iii. flood Risk. 	
6.4.3	The basic unit for identification of aquatic environment receptors is WFD surface water bodies, as defined in the Environment Agency (EA) Cycle 3 River Basin Management Plans (RBMPs) (Ref 34 & Ref 35) or water-dependent designated nature conservation sites. This is to allow alignment of the EIA with the WFD assessment for the Project. However, other classes of watercourse (main river, IDB-maintained watercourse, ordinary watercourse) are also identified as receptors where appropriate.	
6.4.4	Water resource receptors are defined within this assessment as surface water abstractions including their associated upstream catchment. The potential for impacts on water quality and water balance/flow regime in the catchments upstream of abstraction locations have been assessed in order to determine potential effects on the abstractions themselves. The assessment of abstractions in the Water Environment and Flood Risk topic is restricted to those from surface water sources. The potential for effects on groundwater abstractions is considered in the Geology and Hydrogeology topic.	
6.4.5	Discharges to surface water from other parties are also considered as water resource receptors, although there is little scope for effects of the Project on discharges, apart from direct physical impingement, which will be avoided through imposition of suitable stand-off distances between working areas and discharge infrastructure.	
6.4.6	Flood risk receptors are defined within this assessment as external property and infrastructure that could be at risk of flooding. Their sensitivity is defined in terms of the flood risk vulnerability classification set out in Table 2 of the Planning Practice Guidance (PPG) on Flood Risk and Coastal Change (Ref 4) that supports the NPPF (Ref 33). It is recognised that the primary purpose of the NPPF flood vulnerability classification is to guide Flood Risk Assessment (FRA) requirements for new development, but it is also considered to be a useful tool for assessing the relative sensitivity of external receptors for flood risk effects from new development.	
6.4.7	The preliminary assessment for flood risk reported in this Supplementary PEI Report and the previously published June 2025 PEI Report only considers the impacts of the Project on flood risk to external receptors. An appraisal of the risks of flooding to proposed project infrastructure and activities and proposed mitigation of these risks is provided in the Supplementary PEI Report Volume 2 Part C Appendix 4A Preliminary Flood Risk Assessment .	

- 6.4.8 A key part of the Scoping Opinion, specified in paragraphs 3.5.2 and 3.5.3, stated the following with regard to increases in surface water flood risk from impermeable surfaces and disruption to flow paths associated with pylons during operation:
- ‘The Inspectorate notes the advice from the Environment Agency and considers it premature to scope this matter out at this stage. The ES should assess any likely significant effects on flood risk and land drainage during operation (including impacts from flood debris during extreme flood events), or information demonstrating agreement with the relevant consultation bodies that there would not be a likely significant effect.’*
- 6.4.9 On this basis, flood risk effects during the operational phase of the Project from the majority of the Project elements are considered further within the assessment.
- 6.4.10 Further details on the specific Water Environment and Flood Risk receptors scoped in for further assessment are detailed in **Supplementary PEI Report Volume 2 Part B Chapter 6 Water Environment and Flood Risk**.
- 6.4.11 As noted in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses** in accordance with the Scoping Opinion, potential effects on aquatic environment and water resource receptors during the operational phase of the Project from the majority of the Project elements are not considered further within this assessment (shown **Table 6.3**).

Table 6.3 Summary of effects scoped out of the Water Environment and Flood Risk assessment

Receptors	Potential Effects	Justification
Aquatic environment and water resource receptors	Potential effects on the water environment from steelwork delivery, pylon erection, construction, stringing and pulling operations and erection of lattice pylons following foundation installation during construction.	These specific activities would have no interaction with the water environment and are scoped out of further consideration.
Aquatic environment and water resource receptors	Potential increased pollution risk associated with water quality receptors (aquatic ecosystem and water resources receptors) with pylons and the overhead line infrastructure during the operational phase.	There will be no potential for the water quality of surface water receptors to be affected by the operational phase of the Project. Standard procedures will be in place for the operational phase, including adherence to Environment Agency PPG (Ref 4) notes and best practice with regards any routine maintenance works required during the operational phase.
Aquatic environment and water resource receptors	Potential impact on flood conveyance from scaffolding structures on river banks during construction.	On the basis that scaffolding installations would be temporary and managed through regulatory permitting processes, the Inspectorate agrees that effects on flood conveyance would be

Receptors	Potential Effects	Justification
		localised and unlikely to be significant. This matter is scoped out of the ES.
Aquatic environment, water resource and flood risk receptors (third party receptors).	Regular maintenance activities associated with the operational phase of the Project.	The Inspectorate agrees that maintenance activities would pose a low risk of causing likely significant effects on Water Environment receptors. This matter is scoped out of further assessment in the ES.

Study Area

- 6.4.12 The spatial scope of the assessment extends to a Study Area that comprises the draft Order Limits plus a 500m buffer around them. This is in accordance with the Scoping Report (Ref 30) and is considered an appropriate Study Area based on the nature of the Project construction and operation (and maintenance) activities, technical knowledge of similar schemes, and an understanding of source-pathway-receptor linkages for Water Environment and Flood Risk. Beyond the 500 m buffer, effects resulting from the Project are unlikely and have therefore been scoped out. This was accepted by the Planning Inspectorate (PINS) in their Scoping Opinion (Ref 31).

Temporal Scope

- 6.4.13 The temporal scope of the Water Environment and Flood Risk assessment is consistent with the period over which the Project will be carried out (details provided in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**). This will be achieved by considering the National Policy Statement for Energy (EN-1) (Ref 36) climate change emission scenarios appropriate for the Project's lifetime. The assessment has taken into account potential impacts on current and future water quality and hydromorphology in a way which facilitates assessment of compliance with WFD objectives. The assumed construction period extends over a four year period from 2029 to 2033, with some elements of the Project being operational from 2033.
- 6.4.14 The Project is expected to have a life span of more than 80 years. In accordance with the EIA Regulations, the assessments undertaken evaluate and identify the likely significant environmental effects arising from the proposed construction (including the decommissioning (in full or part) of existing infrastructure such as the Grimsby West Substation), operation and maintenance of the Project. As proposed in the Scoping Report (Ref 30) decommissioning (in full or part) of the Project has been scoped out of the environmental assessment as there are no specific plans to decommission the Project as a whole. This approach was agreed as part of the Scoping Opinion (Ref 31).

Assessment Methodology

- 6.4.15 The assessment methodology is applicable for all seven route Sections for the Water Environment and Flood Risk discipline. It presents the criteria used to delineate the value of these receptors and the magnitude of change that they may experience as a result of the Project.
- 6.4.16 The general criteria listed are examples and provide a general overview of the framework. Receptor value and magnitude will be determined on an individual basis. Collectively, the value and magnitude of change criteria provide for an assessment of the significance of effects on Hydrology and Flood Risk receptors.
- 6.4.17 The assessment methodology is broadly consistent with guidance set out in LA113 from the Design Manual for Roads and Bridges (DMRB) (Ref 7). Whilst primarily intended for use in assessing the impacts of highways projects on the water environment, the methodology is widely accepted as suitable for assessing the effects of other types of linear infrastructure. This promotes assessment that is proportionate to the scale and nature of the proposals and considers the value of the local water environment receptors that are potentially impacted by them. However, the specific details of the methodology, particularly with regard to defining the value of receptors, also draw on experience from previous electricity transmission projects, as well as having regard for the specific characteristics of the water environment in the Project Study Area.
- 6.4.18 Given the size of the Project and the presence of large areas of Flood Zone 3 within the Study Area, a supporting Flood Risk Assessment (FRA) will be produced in accordance with the requirements of the Energy National Policy Statement EN-1 and EN-5 and local flood risk management guidelines published by the Lead Local Flood Authorities (LLFAs) and Internal Drainage Boards (IDBs). A preliminary FRA (pFRA) has been produced to support the Supplementary PEI Report (**Supplementary PEI Report Volume 3 Part C Appendix 4A Preliminary Flood Risk Assessment**).
- 6.4.19 A supporting Water Framework Directive (WFD) Compliance Assessment will also be produced for the Project guided by Planning Inspectorate Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive (Ref 2). A preliminary WFD Assessment has been prepared to support the Supplementary PEI Report, which sets out the proposed methodology for the full assessment and presents the results of an initial screening assessment (**Supplementary PEI Report Volume 3 Part C Appendix 4B Preliminary WFD Screening Assessment**). The screening assessment identifies the WFD water bodies that have the potential to be affected by the Project, and the Project activities that could pose a risk to WFD status for screened-in water bodies.
- 6.4.20 Further information regarding the supporting FRA and WFD Compliance Assessment is provided in the following sections.

Assessment Criteria

Value

- 6.4.21 **Table 6.4** provides a summary of the methodology used to classify the value of Water Environment and Flood Risk receptors that may be subject to potential effects. The typical examples provided in the table are based on experience of similar overhead line projects, together with a consideration of the characteristics of the water environment in the Study Area. Reference has also been made to Table 3.70

of DMRB LA113 to ensure the examples provided below are broadly consistent with the DMRB approach. These examples will be used to guide identification of receptor value, but ultimately professional judgement will be employed to select the most appropriate designation on a case-by-case basis. It should be noted that the example definitions provided in **Table 6.4** for aquatic environment receptors have been changed slightly from those provided in the Scoping Report, in order to make them more relevant to the Project Study Area.

Table 6.4 Criteria for assigning value to Water Environment and Flood Risk receptors

Value of Receptor	Criteria	Typical Examples
Very High	Nationally significant attribute of high importance	<p>Aquatic Environment</p> <p>Site designated under European Commission (EC) or UK legislation on the basis of aquatic interest features (Special Area of Conservation, Special Protection Area, Site of Special Scientific Interest, Ramsar site).</p> <p>High status WFD waterbodies (main 'blue line' watercourse), which are typically main rivers.</p> <p>Watercourse in natural equilibrium exhibiting a range of morphological features (e.g. pools, riffles) with negligible anthropogenic modification.</p> <p>Water Resources</p> <p>Source for licensed abstraction for a major public water supply.</p> <p>Flood Risk</p> <p>Essential infrastructure or highly vulnerable development. E.g. Strategic transport routes, utilities infrastructure, emergency services facilities, basement dwellings and mobile homes, installations requiring hazardous substances consent.</p>
High	Locally significant attribute of high importance	<p>Aquatic Environment</p> <p>Designated WFD surface waterbodies at Good Status or lower (main 'blue line' watercourse). Typically main rivers or larger arterial IDB-maintained drains retaining some morphological diversity.</p> <p>Water Resources</p>

Value of Receptor	Criteria	Typical Examples
		<p>Source for licensed abstraction for smaller public water supplies or major commercial, industrial and/or agricultural supply.</p> <p>Flood Risk</p> <p>More vulnerable development. E.g. residential properties, schools and health facilities, camping and short-let caravan sites, landfill for hazardous waste.</p>
Medium	Of moderate quality and rarity	<p>Aquatic Environment</p> <p>Tributary watercourses within the WFD waterbody, but not on the main 'blue line'. Typically Heavily modified or artificial, ordinary or IDB-maintained watercourses with very limited morphological diversity.</p> <p>Water Resources</p> <p>Source for potable private water supply or licensed abstraction for moderate-sized commercial, industrial and/or agricultural supply.</p> <p>Flood Risk</p> <p>Less vulnerable development, comprising most non-residential and commercial land uses, other than those that process hazardous waste, or need to remain operational to support emergency response to flooding.</p>
Low	Lower quality, commonplace	<p>Aquatic Environment</p> <p>Small, heavily modified or artificial ordinary watercourses with negligible morphological diversity, e.g. field edge or roadside drainage ditches.</p> <p>Water Resources</p> <p>Source for minor non-potable private water supply (e.g. for agricultural use).</p> <p>Flood Risk</p> <p>Water compatible development, comprising those land uses which are resilient to flooding and/or must be located near water due to their function. E.g. flood control, navigation and water and sewage</p>

Value of Receptor	Criteria	Typical Examples
		transmission infrastructure, amenity open space, nature conservation and biodiversity areas.

Magnitude

- 6.4.22 The magnitude of change (impacts) acting on Water Environment and Flood Risk receptors is independent of the value of the feature. This is largely a qualitative assessment, which relies on professional judgement, although it may be informed by quantitative information and analysis where data are available and where appropriate.
- 6.4.23 **Table 6.5** provides examples of how various magnitudes of change will be determined with respect to Water Environment and Flood Risk receptors. The criteria consider the scale and extent of the predicted change and the nature and duration of the impact. The classification of magnitude implicitly takes receptor sensitivity into account, as the magnitude of change is based on consideration of change in receptor status, which is a function of the impact arising from the Project together with the capacity of the receptor to absorb the impact. Where relevant, these examples are aligned with those provided in Table 3.71 of DMRB LA113.

Table 6.5 Criteria for assessing impact magnitude

Magnitude of Impact	Criteria	Typical Examples
Large adverse	Results in loss of attribute and/or quality and integrity of the attribute	<p>Loss or extensive change to a fishery.</p> <p>Loss or extensive change to a designated nature conservation site.</p> <p>Reduction in waterbody WFD classification.</p> <p>Major, long-term pollution or depletion of yield of an abstraction source leading to complete loss of supply.</p> <p>Extensive change to channel planform, replacement of large extent of natural bed/bans with artificial material.</p> <p>Increase in peak flood level (1 per cent annual exceedance probability) of >100 mm.</p>
Medium adverse	Results in effect on integrity of attribute, or loss of part of attribute.	<p>Partial loss in productivity of a fishery.</p> <p>Contribution to reduction in waterbody WFD classification.</p> <p>Moderate long-term pollution or depletion of yield of an abstraction source leading to a reduction in supply or increased treatment requirements.</p> <p>Replacement of natural bed material or banks with artificial material over more than 3 per cent of the water body's total length.</p>

Magnitude of Impact	Criteria	Typical Examples
		Increase in peak flood level (1 per cent annual exceedance probability) of >50 mm.
Small adverse	Results in some measurable change in attribute's quality or vulnerability	<p>Minor and short-term temporary deterioration from baseline hydromorphological conditions, without change in WFD classification.</p> <p>Minor and short-term temporary reduction in water resource quality or availability, without change in WFD classification.</p> <p>Increase in peak flood level >10 mm.</p>
Negligible	Results in effect on attribute, but of insufficient magnitude to affect the use or integrity	<p>Negligible change in peak flood level (≤ 10 mm).</p> <p>No measurable impact on WFD waterbodies or river channel planform.</p> <p>No measurable change in water resource quality or availability</p>
Small beneficial	Results in some beneficial effect on attribute or a reduced risk of negative effect occurring	<p>Minor and short-term temporary improvement from baseline hydromorphological conditions, without change in WFD classification.</p> <p>Minor and short-term temporary improvement in water resource quality or availability, without change in WFD classification.</p> <p>Creation of flood storage and reduction in peak flood level (1 per cent AEP) >10 mm.</p>
Medium beneficial	Results in moderate improvement of attribute quality	<p>Contribution to improvement waterbody WFD classification.</p> <p>Improvements to morphological diversity at the local scale.</p> <p>Creation of flood storage and reduction in peak flood level (1 per cent AEP) >50 mm.</p>
Large beneficial	Results in major improvement of attribute quality	<p>Removal of existing polluting discharge or removing likelihood of polluting discharges to a watercourse.</p> <p>Major improvement to morphological diversity at reach scale e.g. through culvert removal.</p> <p>Improvement in waterbody WFD classification.</p> <p>Creation of flood storage and reduction in peak flood level (1 per cent AEP) >100 mm.</p>
No change	No change, either beneficial or detrimental, to attribute quality	

- 6.4.24 Embedded mitigation measures will be considered when determining the magnitude of change for each Water Environment and Flood Risk receptor.

Significance of Effect

- 6.4.25 The EIA Regulations require that a final judgement is made about whether or not each effect is likely to be significant. The significance of potential and residual effects is derived by considering both the value of the feature and the magnitude of change. In this assessment, effects are considered to be Significant or Not Significant according to the matrix in **Table 6.6**. This matrix is aligned with the overall approach to assessment of significance of effects as set out in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**. In broad terms, effects which are moderate or above will be considered to be significant.

Table 6.6 Significance matrix

Magnitude of Impact	Value/ Sensitivity of Receptor			
	Very High	High	Medium	Low
Large	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Small	Moderate	Moderate	Minor	Negligible
Negligible	Minor	Negligible	Negligible	Negligible
No Change	No effect	No effect	No effect	No effect

Supporting Assessments

Flood Risk Assessment

- 6.4.26 The FRA will consider flood risk from all relevant sources during both construction and operation, incorporating allowance for climate change in accordance with published guidance where applicable (Ref 37). It will also include details of the measures proposed to adhere to local drainage and flood risk planning policies. The FRA will consider all potential flood risks to the Project, as well as the potential flood risks on external receptors arising from the Project. The results from the FRA will be used to inform the assessment of effects on external flood risk receptors and presented in the ES.
- 6.4.27 The pFRA provides a preliminary assessment of flood risks to, and arising from, the Project, based on publicly available flood risk information. It provides an initial overview of mitigation measures that are expected to be required to address the identified flood risks and identifies the further technical assessments that are required to support the final FRA.

Water Framework Directive Assessment

- 6.4.28 An integrated WFD assessment will be prepared to support the ES. It will assess potential impacts of the proposed works on WFD status of surface water and groundwater bodies intersecting the Study Area. The advice and guidance provided within the Environment Agency's 'Clearing the Waters for All (Ref 3) and the Planning Inspectorate 'Advice on the Water Framework Directive' (Ref 2) will be followed.
- 6.4.29 The effects of the Project on the status of water bodies reported in the Humber River Basin Management Plan (Ref 34) and the Anglian River Basin Management Plan (Ref 35) and the waterbodies therein will be described, and the assessment will set out how the Project design has been developed to align with the requirements of the Regulations. A qualitative approach is proposed, and the assessment will identify how the Project design will avoid waterbody deterioration, as well as any other mitigation necessary.
- 6.4.30 The WFD assessment will consider the likely significant effects of the Project on the biological, physico-chemical, chemical, and hydromorphological quality elements of surface water features within the Study Area.
- 6.4.31 The groundwater WFD assessment will assess potential effects upon the chemical quality, flow and levels of groundwater features within the Study Area.

6.5 Assessment Assumptions and Limitations

- 6.5.1 The following general assumptions and limitations are applicable to the preliminary Water Environment and Flood Risk assessment for all Sections of the Project. Any assumptions and limitations which are applicable to Section 5 of the Project are presented within **Supplementary PEI Report Volume 2 Part B Chapter 6 Water Environment and Flood Risk**:
- i. The assessment has been undertaken based on preliminary Project design information. This information is iterative and will be updated for the ES as the design evolves and relevant changes are accounted for in the assessment.
 - ii. Design information on water use (sources and volumes) during construction is not currently available. Indicative estimates will inform the ES assessment.
 - iii. It is currently assumed that no discharges (other than treated surface water runoff) to surface waters are required for the Project during its operation (and maintenance).
 - iv. The choice of watercourse crossing technique is dependent on several factors, for example, watercourse size, flood risk sensitivity, ecological sensitivity, and location. Proposed crossings consist of new closed culverts or new single span bridges. Where there is currently uncertainty on crossing technique due to ongoing design work, new closed culverts would be assessed as it is the worst-case. This is because closed culverts result in replacement of the natural river bed and banks with hard surfaces which can disrupt natural morphological function and can prove to be an obstacle to continuity of aquatic habitat. Watercourse diversion and crossing techniques proposed at each watercourse will be confirmed and described in the ES once the design has evolved, and ground conditions are better understood following ground investigation works.
 - v. It has been assumed that temporary discharges generated from dewatering activities, for example, around pylon bases, would be made to ground, rather

than to watercourses. Where this is not practicable in localised areas, any discharge to surface water would be made in compliance with relevant consents. Data on consented discharges to and licensed abstractions from surface water have been requested from the Environment Agency and require further review.

- vi. Stakeholder engagement with key regulators such as the LLFAs and IDBs is ongoing to further develop understanding of the key Water Environment and Flood Risk issues associated with the Project and this will inform the next stage of assessment through to DCO submission.
- vii. The preliminary assessment has relied upon data and records provided by third parties, and therefore it has been assumed that this information is accurate and up to date at the time of reporting.
- viii. It is assumed that there is insufficient data from the Environment Agency, LLFAs and IDBs to fully characterise all aspects of flood risk to the Project. As a consequence, hydraulic models may need to be updated and/or created to inform the FRA;
- ix. It is assumed there is sufficient data from the Environment Agency to define the current condition and standards of protection provided by existing flood defences, and that no baseline condition surveys will be required;
- x. No water quality sampling and analysis is proposed as it is considered that sufficient baseline data is available to generally characterise the water quality of surface water receptors.
- xi. No watercourse surveys have been undertaken to inform the Water Environment and Flood Risk Supplementary PEI Report and the previously published June 2025 PEI Report. These surveys will be undertaken to inform the Biodiversity Net Gain assessment. Relevant results from these surveys will be reported in the Water Environment and Flood Risk ES and final WFD Compliance Assessment.
- xii. The design of the Project will continue to be developed in advance of completion of the EIA. As part of this preliminary assessment, recommended mitigation has been presented in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description** and, where possible, considered in the assessment of residual effects.
- xiii. As set out in section 6.4 (survey work), walkover surveys have not yet been completed and will be undertaken in 2025. Outputs will be collated with field notes and photographs collected during watercourse surveys aquatic ecology surveys.

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7. Geology and Hydrogeology

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7. Geology and Hydrogeology

7.1 Overview

- 7.1.1

This appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Geology and Hydrogeology assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.
- 7.1.2

The assessment methodology will be the same across all seven Sections for the Geology and Hydrogeology discipline. In order to prepare the assessment, a proportionate data gathering exercise has been undertaken, which has included a review of publicly available data sources and other information requested specifically for the Project as set out within section 7.3 of this document.

7.2 Guidance Specific to Geology and Hydrogeology Assessment

- 7.2.1

Relevant guidance and standards that have informed the assessment methodology are provided below in **Table 7.1**.

Table 7.1 Technical guidance relevant to Geology and Hydrogeology

Technical Guidance Document	Context
Environment Agency, 2023. Land Contamination Risk Management (Ref 2)	Overarching technical guidance for land contamination risk assessments.
CIRIA, 2007. Assessing risks posed by hazardous ground gases to buildings (CIRIA publication 665) (Ref 3)	Technical guidance on ground gas risk assessment.
Natural England, 2006. Geological Conservation – A guide to good practice (Ref 4)	Explains the key factors to be considered when assessing geological conservation sites.
CIRIA, 2001. Contaminated Land Risk Assessment: A Guide to Good Practice (CIRIA publication 552) (Ref 5)	Guidance on land contamination risk assessment principles.

Technical Guidance Document	Context
CIRIA, 2006. Control of water pollution from linear construction projects (CIRIA publication 648) (Ref 6)	Technical guidance on practical considerations and measures for protecting groundwater and surface water during construction of linear infrastructure projects.
Environment Agency, 2024. Environment Agency Groundwater Protection guidance (Ref 7)	Collection of guidance documents covering groundwater permissions, risk assessments and controls.
Environment Agency, 2018. The Environment Agency's approach to groundwater protection (Ref 8)	A report providing information on the Environment Agency's approach to managing and protecting groundwater, including principles and approaches for a range of activities.

7.3 Data Sources

- 7.3.1 To prepare the Supplementary PEI Report the following information sources have been utilised:
- Published historical mapping to identify potentially contaminative former land uses (National Library of Scotland mapping, (Ref 9);
 - UK Health Security Agency radon mapping (Ref 10);
 - Geological mapping published by the British Geological Society (BGS) (1:50,000 scale) (Ref 11);
 - Historical borehole records held by the BGS (Ref 11);
 - Groundwater abstraction details (public and private), discharge consents, historical pollution incident records, and historical and authorised landfills, as available from the Environment Agency (EA) and Local Planning Authorities, obtained through formal data requests;
 - Department for Environment, Food and Rural Affairs (DEFRA) groundwater aquifer information, provided through MAGIC (Multi-Agency Geographic Information for the Countryside) (Ref 12);
 - Source Protection Zones (SPZ) data, available under Open Government License (Ref 13);
 - EA Catchment Data Explorer records on groundwater quality (Ref 14);
 - Natural England designated Sites, i.e. Geological Sites of Special Scientific Interest (SSSI) (Ref 12);
 - Zetica Unexploded Ordnance (UXO) online hazard mapping (Ref 15);
 - Any relevant information regarding historical ground contamination that is available from the local planning authorities. This has been obtained through formal data requests to the Environment Protection departments (or equivalent) of each authority; and

xii. Review of relevant local planning documentation and readily available local geo-conservation documents.

- 7.3.2 The data sources listed above are as specified in the Scoping Report (Ref 16). Furthermore, where additional information over and above this is available from geotechnical assessments being undertaken in support of the engineering design of the Project, this supplementary information has also been used. This includes Groundsure historical feature polygons and geo-environmental data search records for partial coverage within the Study Area (approximately 2,900 hectares in a 100 m wide swathe for the Project), originally obtained relative to earlier provisional engineering design alignment options.
- 7.3.3 It should be noted that all data sources listed above have been utilised in preparation of the Geology and Hydrogeology assessment for the Supplementary PEI Report and the previously published June 2025 PEI Report. However, where these sources do not show information within the Study Area for a particular Section, the data source is not referenced. This is also appropriate where the data source is not relevant to the proposed development within that Section. For example, radon mapping is only relevant to development including enclosed spaces, therefore has not been referenced within June 2025 PEI Report Volume 2 Part B Sections 2, 4 and 6 where the development includes only overhead line and pylons, and no permanent enclosed spaces.

7.4 Approach to Geology and Hydrogeology Assessment

Scope of Assessment

- 7.4.1 The scope of the assessment is informed by the Scoping Opinion (Ref 17) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 16). The scope is also informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Geology and Hydrogeology chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**. A summary of the stakeholder engagement undertaken to date is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4D Summary of Stakeholder Engagement**.
- 7.4.2 Non-statutory consultation feedback has been addressed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 18).
- 7.4.3 **Table 7.2** identifies the receptors scoped in and out of the Geology and Hydrogeology assessment.

Table 7.2 Scope of assessment

Receptor	Effect	Project Phase	Scoped In/Out	Rationale
Human health (construction workers, adjacent land users)	Exposure to pre-existing soil contamination,	Construction	In	Although the Scoping Report identified a low risk of potential contamination, this did

Receptor	Effect	Project Phase	Scoped In/Out	Rationale
	including dust and vapours			not include a detailed review of baseline conditions and the possibility for existing contamination could not be ruled out.
Groundwater quality (aquifers and abstractions)	Mobilisation of pre-existing contamination	Construction	In	
Soil/land quality	Deterioration in chemical quality, caused by the release of contamination by construction activities	Construction	In	Some level of risk of inadvertent release of contamination is inherent in the construction activities associated with the Project. However, environmental controls should be such that any accidental leaks/spills are prevented, minimised and mitigated in accordance with environmental legislation and good practice. The effect is scoped in to allow these procedures to be covered in the assessment.
Groundwater quality (aquifers and abstractions)		Construction	In	
Groundwater quality and quantity (aquifers and abstractions)	Physical effects on groundwater, including depletion of an aquifer, increased solids/turbidity, or changes in levels and flows due to dewatering and/or discharge	Construction	In	Due to the nature of the Project and potential for shallow groundwater, there is likely to be some level of dewatering required, which will generate water requiring either discharge or disposal.
Human health (construction workers, adjacent land users)	Asphyxiation from ingress and accumulation of ground gas	Construction	In	The potential for localised areas of gas generating soils cannot be discounted, so the effect is given consideration on a precautionary basis.
Structures	Explosion from ingress and accumulation of ground gas	Construction	In	

Receptor	Effect	Project Phase	Scoped In/Out	Rationale
Human health (future land users)	Asphyxiation due to accumulation of ground gases within permanent structures	Operation and Maintenance	In	The potential for ground gas generating materials (man-made or natural soils with organic degradable content) in proximity to enclosed structures for the Project (substations) cannot be ruled out.
Structures	Explosion due to accumulation of ground gas within permanent structures	Operation and Maintenance	In	
Groundwater quality and quantity (aquifers and abstractions)	Changes to infiltration, for example due to the presence of impermeable surfaces and engineered drainage at substation site	Operation and Maintenance	In	The presence of new impermeable surfaces within the Project, for example in substation locations, can alter the infiltration regime and subsequently groundwater flows and levels within the aquifers.
Human health (future land users, adjacent land users)	Maintenance work that involves ground disturbance, resulting in exposure to soil contamination, dust or vapours	Operation and Maintenance	In	Although the Scoping Report identified a low risk of potential contamination, this did not include a detailed review of baseline conditions and the possibility for existing contamination could not be ruled out.
Groundwater quality and quantity (aquifers and abstractions)	Changes to groundwater flows, levels and quality within aquifers as a result of dewatering.	Operation and Maintenance	Out	There is not expected to be any dewatering as part of the operational phase of the Project.
Proposed Structures	Damage to proposed structures that will be built as part of the Project from unstable or chemically	Operation and Maintenance	Out	This effect is effectively designed out as part of standard engineering design procedures.

Receptor	Effect	Project Phase	Scoped In/Out	Rationale
	aggressive ground.			
Structures and Human health	Harm to human health and damage to structures associated with ground instability effects relating to historical coal mining	Construction, Operation and Maintenance	Out	The Study Area is not located within a recorded Coal Mining Reporting Area, so there are no potential effects associated with this to assess.
Geological conservation sites	Effects on designated geological conservation sites	Construction, Operation and Maintenance	Out	This effect was provisionally scoped out on the basis that the Scoping Report did not identify any locally designated sites, but that further baseline characterisation would be required within the Supplementary PEI Report to confirm their absence

Study Area

- 7.4.4 For the purposes of this assessment, a Study Area of the draft Order Limits plus a 250 m buffer for geological receptors and a 500 m buffer for hydrogeological receptors has been applied. This is considered to be a proportionate and suitable approach for the assessment and was agreed within the Scoping Opinion (Ref 17). Hydrogeological receptors further from the draft Order Limits are more susceptible to effects from the Project than geological receptors due to the mobile nature of groundwater and corresponding potential for the Project to affect receptors at a greater distance, hence the larger Study Area for hydrogeological receptors.

Assessment Methodology

- 7.4.5 The data collection outlined above has enabled the baseline conditions to be considered, which have then been used to identify potential source-pathway-receptor linkages and inform a risk-based assessment of the effects of the Project. This approach follows published guidance (e.g. Land Contamination Risk Management, (Ref 2)) and has been placed into an EIA classification as follows. For each potential effect¹,

¹ Given the size and length of the Study Area and to provide a comprehensive but proportionate assessment, when considering the potential effects relating to the risk of encountering and mobilising pre-existing ground or groundwater contamination, a preliminary screening assessment has been undertaken to determine which locations require assessment in the EIA. The previous land uses/potential sources within the Study Area have been

the receptor sensitivity and magnitude of change has been assigned using **Table 7.4** and **Table 7.5** which are then combined to give an output in **Table 7.6**.

- 7.4.6 The output of the assessment is the level of effect determined from **Table 7.6**. This has classified each potential effect as either negligible, minor, moderate or major. However, it should be noted that, when considering effects relating to contamination, the output of the assessment is a risk classification, rather than a predicted effect. For example, minor ‘effects’ in relation to health risks from exposure to soil contamination would reflect an assessment that there is a low/very low risk of significant effects occurring, rather than indicating that there is a predicted adverse effect that would be of a minor nature.
- 7.4.7 This approach integrates the topic-specific requirement for effects to be assessed via a risk-based approach into the EIA methodology and is an application of the methodology provided within Construction Industry Research and Information Association (CIRIA) C552 (Ref 5), which recommends considering potential effects as a function of ‘consequence’ and the probability of the effect occurring.
- 7.4.8 Where the outcome of the assessment is a moderate or major effect/risk, then the effect/risk has been considered significant and mitigation would be required. Where the outcome is a minor or negligible effect/risk, then the effect/risk has been considered non-significant and mitigation would not ordinarily be required.
- 7.4.9 The potential effects have been assessed for the construction, operational and maintenance phases of the Project. Whilst the assessment approach has been based on **Table 7.3**, **Table 7.4**, **Table 7.5** and **Table 7.6**, all assessment outcomes have been subject to review using qualitative professional judgement, with flexibility to amend the outcomes on this basis with supporting evidence and justification.

Table 7.3 Initial contamination screening assessment criteria

Risk Classification	Potential for Generating Contamination
Very Low	Contamination that could be of note in the context of an electricity infrastructure construction project is very unlikely – e.g. residential, retail or offices, agriculture.
Low	Some potential for contamination, but previous and current uses are of low risk and unlikely to be of note in the context of an electricity infrastructure construction project e.g. low risk commercial uses, such as depots or warehouses.
Moderate	Some potential for contamination, with previous and current processes that are considered a risk of generating widespread slightly elevated contamination levels and/or more localised areas of more severe

identified and classified into risk levels by type in accordance with **Table 7.3**. The sources/areas with a moderate, high or very high potential risk of notable contamination being present have been taken forward for assessment within the EIA. Where a low, very low or negligible risk of notable contamination being present is identified, these sites/areas have not been taken further for the EIA assessment on the basis that significant effects are unlikely. The preliminary screening assessment for each Section is provided in Appendix 7A for that Section.

Risk Classification	Potential for Generating Contamination
	contamination – e.g. railways, railway yards, collieries, scrap yards, inert landfills.
High	Previous and current uses that are commonly associated with widespread elevated contamination potential – e.g. major industry, non-hazardous landfills.
Very High	Previous and current uses that are associated with the highest risk of elevated contamination – e.g. hazardous landfills, gas works, chemical works.

7.4.10 Each potential effect of moderate or greater risk of contamination as per **Table 7.3** above has been carried forward for assessment in the EIA using **Table 7.4** and **Table 7.5**, to give an assessment of the effect in **Table 7.6**.

Table 7.4 Receptor Sensitivity/Importance/Value

Sensitivity	Land Contamination, Geological Conservation and Ground Instability Criteria	Hydrogeological Criteria
High	<p>Human health risk, where receptor characteristics promote exposure and/or vulnerability to soil contamination or ground gas.</p> <p>Structures of high susceptibility to ground instability and/or high importance.</p> <p>Geological conservation: very rare or rare and of either international or national importance with little or potential for replacement (e.g. United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Sites, UNESCO Global Geoparks, GCR sites where citations indicate features of international importance, geological SSSI, ASSI). Geology meeting international or national designation citation criteria which is not designated as such.</p>	<p>Groundwater that is used for human consumption, and/or is within geological units that display a high level of water storage and may support water supply and/or river base flow on a strategic scale. Includes all Principal Aquifers and SPZ.</p>
Medium	<p>Human health risk, where receptor characteristics limit exposure and/or vulnerability to soil contamination and ground gas.</p> <p>Soil/land: crops, livestock or plants in managed planting/landscaping schemes (parks/verges) etc. Agricultural assets whose quality may be affected by exposure to contamination.</p>	<p>Groundwater that is not currently used for human consumption, but which is within Secondary A Aquifers.</p> <p>Groundwater that is currently used for agricultural purposes (e.g. field irrigation).</p>

Sensitivity	Land Contamination, Geological Conservation and Ground Instability Criteria	Hydrogeological Criteria
	<p>Structures of medium susceptibility to ground instability and/or medium importance.</p> <p>Geological Conservation: geology of regional importance with limited potential for replacement (e.g. Regionally Important Geological Sites). Geology meeting regional designation criteria which is not designated as such.</p>	
Low	<p>Human health risk, where receptor characteristics significantly minimise exposure and/or vulnerability to soil contamination and ground gas.</p> <p>Structures of low susceptibility to ground instability and low importance.</p>	<p>Groundwater that is not currently used for human consumption but is within Secondary B Aquifers.</p> <p>Groundwater that is abstracted for low sensitivity industrial purposes (e.g. cooling water).</p>
Negligible	<p>Land/soil: Phytotoxic effects on non-agricultural plants that are not part of managed planting/landscaping schemes.</p> <p>Geological Conservation: no designated sites or geology of known recorded local interest.</p>	<p>Groundwater that does not contribute meaningfully towards river base flow and is not used, and does not have a potential to be used, for drinking water supply.</p>

Table 7.5 **Magnitude of change (Impact)**

Magnitude	Land Contamination and Ground Instability Criteria¹	Hydrogeological Criteria²
High	<p>Risk assessment indicates that contaminant levels may present an unacceptable acute health risk or a substantial chronic health risk.</p> <p>Ground instability resulting in direct harm to health (for example, severe injury or death), and/or resulting in severe structural damage to, or immediate collapse of, buildings or infrastructure.</p> <p>Geological conservation: loss of geological features / designation and/or quality and integrity, severe damage to key characteristics, features or elements.</p>	<p>Release of Priority Hazardous Substances or substances regulated under 'The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015' (Ref 19) of the 'Water Supply (Water Quality) Regulations 2016' (Ref 20) at concentrations that may present a direct/imminent risk to abstractions.</p> <p>Physical or chemical effects on an aquifer (i.e. changes in groundwater levels, flows, yield or quality) that substantively restrict its viability as an abstractable resource and/or its WFD status.</p>
Medium	<p>Risk assessment indicates that contaminant levels may be elevated, potentially resulting in a chronic health</p>	<p>Release of contamination at concentrations that may lead to substantial localised degradation in</p>

Magnitude	Land Contamination and Ground Instability Criteria ¹	Hydrogeological Criteria ²
	<p>risk that, whilst likely to be low or moderate, may require action (e.g. typically contaminant concentrations slightly or moderately above precautionary screening criteria).</p> <p>Death or major health effects on livestock or significant direct damage to crops or plants in a managed planting/landscaping scheme that is directly attributable to soil contamination.</p> <p>Ground instability that may cause structural damage gradually over time.</p> <p>Geological conservation: partial loss of geological feature/designation, potentially adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.</p>	<p>groundwater quality, but not present a direct/imminent risk to abstractions.</p> <p>Physical or chemical effects on an aquifer (i.e. changes in groundwater levels, flows, yield or quality) that limit its effectiveness as a resource and may affect its status.</p>
Low	<p>Minor damage to crops or plants in a managed planting/landscaping scheme that is directly attributable to soil contamination.</p> <p>Geological conservation: minor measurable change in geological feature/designation attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.</p>	<p>Minor localised changes to groundwater quality, flow, levels or yields. Changes are localised, with little effect on the use or status of the groundwater resource and present no significant risk to abstractions.</p>
Negligible	<p>Risk assessment indicates that there is no significant potential for adverse human health effects. No damage to crops, livestock or plants. No damage to structures from ground instability.</p> <p>Geology: very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature/designation. Overall integrity of resource not affected.</p>	<p>No/minimal measurable effect on groundwater levels, quantities, flows or chemical quality, or on the use or status of a groundwater resource.</p>

¹ The contamination assessments will be based on desk-study information, using a reasonable worst case assessment of the likely presence and severity of contamination.

² The hydrogeological criteria do not include the magnitude of change that may be caused to Groundwater Dependent Terrestrial Ecosystems (GWDTE) or surface water receptors as a result of changes to groundwater that feeds these receptors. This is because effects on these receptors are considered in Ecology and Biodiversity and Water Environment, respectively.

Table 7.6 Matrix to determine the level of effect on receptors

Receptor Sensitivity	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

7.4.11 Following the classification of an effect using **Table 7.6**, only those identified as major and moderate are considered to be significant, whilst minor and negligible effects are considered to be not significant.

7.5 Assumptions and Limitations

7.5.1 The following limitations and assumptions have been identified for the assessment:

- i. The assessment approach to be taken forward within this Supplementary PEI Report and the previously published June 2025 PEI Report is based on desk study information. ‘Reasonable worst-case’ assumptions regarding the likely ground conditions have been made when assessing effects within this Supplementary PEI Report and previously published June 2025 PEI Report, determined from the desk study information. Site inspections or ground investigations specific to the Geology and Hydrogeology assessment have not been undertaken at present and are not anticipated, unless specific high-risk circumstances are identified from the desk study information that warrant this.
- ii. The scope of assessment and significant effects described within this chapter are based on the current design information as described within **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**. It is anticipated that these details of the development will be subject to refinement as the Project progresses. The approach to data gathering and assessment provided within the Geology and Hydrogeology assessment is intended to be flexible and is expected to remain applicable as the design develops.
- iii. The level of assessment within this Supplementary PEI Report and previously published June 2025 PEI Report will be developed further in the subsequent Environmental Statement (ES) stage, due to more detailed design information which will be available as the Project progresses, such as detailed drainage design within substation locations, where construction of impermeable surfaces requires consideration in relation to groundwater.
- iv. The results of ground investigations undertaken purely for engineering purposes within substation locations have not been included within the assessment for the Supplementary PEI Report or the and previously published June 2025 PEI Report, because the data are not available at the time of writing. It will be used within the ES if relevant and appropriate to the assessment, to confirm local ground conditions and groundwater levels.

- 7.5.2 The geohazards dataset reviewed as part of this assessment was initially obtained to inform engineering assessments during earlier design stages. Therefore, it provides only limited spatial coverage relative to the current Project design. However, reasonable inference can be made from the available data given the close correlation between geohazards classifications and mapped geology (for which there is full spatial coverage of the Study Area). As such, this limitation is considered likely to have minimal effect on the assessment, but will be addressed in the ES by additional data where deemed necessary.
- 7.5.3 The review of historical land use has been undertaken from an online historical mapping resource (Ref 9), supplemented by review of the Groundsure historical feature polygons, which were obtained relative to earlier provisional engineering design alignment options and therefore only have partial coverage within the Study Area. Further data will be obtained in this regard to inform the ES, where necessary.
- 7.5.4 North East Lincolnshire Council have not provided details of private water supplies within their district.
- 7.5.5 These key parameters and assumptions will be reviewed based on the design presented in the DCO application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.

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- Ref 20 Water, England and Wales. 2016. The Water Supply (Water Quality) Regulations.

8. Agriculture and Soils

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8. Agriculture and Soils

8.1 Overview

- 8.1.1 This appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Agriculture and Soils assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.
- 8.1.2 The assessment methodology will be the same across all seven Sections for the Agriculture and Soils discipline. In order to prepare the assessment, a comprehensive data gathering exercise has been undertaken as set out within section 8.3 of this document.

8.2 Guidance Specific to Agriculture and Soils Assessment

- 8.2.1 Relevant guidance and standards that have informed the assessment process are listed below (but not limited to):
- i. Safeguarding our Soils. A Strategy for England (Ref 2).
 - ii. Guide to Assessing Development Proposals on Agricultural Land: Natural England, 2021 (Ref 3) (taking into account Technical Information Note 049. Agricultural Land Classification (ALC) Protecting the Best and Most Versatile Agricultural Land: Natural England 2009) (Ref 4);
 - iii. Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction: The British Society of Soil Science 2022 (Ref 5);
 - iv. Specification for topsoil (BS3882:2015): British Standards Institute 2015 (Ref 6);
 - v. Agricultural Land Classification of England and Wales, Revised Criteria and Guidelines for Grading the Quality of Agricultural Land: Ministry of Agriculture, Fisheries and Food 1988 (Ref 7);
 - vi. Environmental Improvement Plan, Department of Environment, Food & Rural Affairs 2023 (Ref 8);
 - vii. Construction Code of Practice for the Sustainable Use of Soils on Construction Sites: Defra 2009 (Ref 9);
 - viii. Good Practice Guide for Handling Soils in Mineral Workings: Institute of Quarrying 2021 (Ref 10);
 - ix. Good Practice Guide for Soil Handling: Ministry of Agriculture, Fisheries and Food 2000 (Ref 11);
 - x. A New Perspective on Land and Soil in Environmental Impact Assessment: Institute of Environmental Management and Assessment, 2022 (Ref 12);

- xi. Soil Survey Field Handbook: Describing and Sampling Soil Profiles: Hodgson, J.M. 2022 (Ref 13); and
- xii. The Design Manual for Roads and Bridges (DMRB) LA112: National Highways 2020 (Ref 14).

8.3 Data Sources

8.3.1 The following data has been used to inform the baseline conditions:

- i. British Geological Survey (BGS) Geology Viewer (Ref 15);
- ii. Ordnance Survey (OS) mapping and aerial photography (Ref 16);
- iii. Agricultural Land Classification – Provisional (England) (Ref 17);
- iv. Post-1988 Agricultural Land Classification (ALC) (England) (Ref 17);
- v. National Soil Association Map of East Midlands and Eastern England and soil data from National Soils Resources Institute at Cranfield university (NSRI) (Ref 18);
- vi. Likelihood of BMV Agricultural Land map (Ref 19);
- vii. Relevant Agriculture and Soils data from other projects which overlap with the draft Order Limits; and
- viii. Climate data sets for ALC assessment (Ref 20).

8.3.2 A detailed ALC survey is being undertaken between January and October 2025 to support the assessment presented in the Environmental Statement (ES) to be submitted with the DCO application. This information will further refine the ALC and soils sections within the ES. A Detailed ALC Survey Report will be included as an appendix within the ES.

Data Gathering Methodology

8.3.3 The Supplementary PEI Report, and the previously published June 2025 PEI Report, assessments have been supported by a collation and review of available baseline data from the sources listed above.

8.3.4 Field data collection is being undertaken through a soil and ALC survey, following the Survey Strategy provided in **Annex B Agriculture and Soils Survey Strategy**, which details the approach to agricultural and soils field surveys.

8.3.5 The soil and ALC survey and assessment is being undertaken in accordance with the Soil Survey Field Handbook (Ref 13) and the ALC guidelines (Ref 7) (to provide a survey coverage of at least one auger per hectare where possible) and will characterise soil properties based on an examination of soil profiles, from which agricultural land grade as well as soil resilience can be calculated and assessed. The soil and ALC survey will be used to inform the ES assessment.

8.3.6 The Survey Strategy seeks to integrate the avoidance of permanent loss of BMV land and the avoidance of peat into the Project design where practicable. It states that the survey data gathered will be used to inform the development of an outline Soil Management Plan (Outline SMP), to minimise the risk of damage to soils and ensure their appropriate reinstatement or re-use. Alongside, a Preliminary Code of

Construction Practice (CoCP), provided in **Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice**, has been developed to minimise the risk of impacts on the quality of agricultural land and soil, particularly during construction.

8.4 Approach to Agriculture and Soils Assessment

Scope of Assessment

- 8.4.1 The scope of the assessment is informed by the Scoping Opinion provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report. The scope is also informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Agriculture and Soils chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 8.4.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 21). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 8.4.3 **Table 8.1** identifies the receptors scoped in and out of the Agriculture and Soils assessment.

Table 8.1 Scope of the assessment

Receptor	Project Phase	Scoped In/Out	Rationale
Agricultural Land Classification	Construction	Scoped In	A very large proportion of land within the draft Order Limits is likely to be BMV land and thus there could be temporary or permanent loss of this resource due to the construction of the required infrastructure. ALC surveys are being undertaken to inform the assessment to be presented within the ES, and the information will be used to support the development of good practice soil handling measures which will be detailed in the Outline SMP.
	Operation and maintenance	Scoped In	Works required during operation and maintenance activities are likely to be limited in terms of the land areas required. Any soil disturbance required would be undertaken following good practice guidance in place at that time, and as such it is not expected that significant effects would occur: it is accepted that temporary developments can result in long-term

Receptor	Project Phase	Scoped In/Out	Rationale
			impacts but an Outline SMP will be submitted with the DCO setting out details of the good practice approach to soil handling during construction and operation/maintenance. Further detail will be provided in the ES in relation to the likely scale and nature of maintenance and operation activities which could impact agricultural land and soils receptors and the commitments to minimise effects.
Soil function	Construction	Scoped In	<p>Soil quality, and thus soil function, could be adversely affected during construction as a result of soil handling, storage and reinstatement/re-use.</p> <p>ALC surveys are being undertaken to inform the assessment to be presented within ES, and the information will be used to support the development of good practice soil handling measures which will be detailed in the Outline SMP to be submitted with the ES.</p>
	Operation and maintenance	Scoped In	<p>Works required during operation and maintenance activities are likely to be limited in terms of the land areas required. Any soil disturbance required would be undertaken following good practice guidance in place at that time, and as such it is not expected that significant effects would occur: it is accepted that temporary developments can result in long-term impacts but an Outline SMP will be submitted with the DCO setting out details of the good practice approach to soil handling during construction and operation/maintenance. Further detail will be provided in the ES in relation to the likely scale and nature of maintenance and operation activities which could impact agricultural land and soils receptors and the commitments to minimise effects.</p>

Receptor	Project Phase	Scoped In/Out	Rationale
Agricultural landholdings	Construction	Scoped In	A large proportion of land within the draft Order Limits is agricultural land. The temporary and permanent loss of this land will be assessed.
	Operation and maintenance	Scoped In	Land use is predominantly arable, and so of low sensitivity. Land required temporarily would be reinstated to its pre-construction condition and impacts on individual agricultural businesses would be dealt with through financial compensation in accordance with the compensation code (which would include consideration of any active agri-environment and/or forestry/woodland schemes).

Study Area

- 8.4.4 The Study Area for the assessment of Agriculture and Soils comprises the draft Order Limits as agreed within the Scoping Opinion (Ref 1). The assessment is confined to within this boundary as no land will be affected outside of this.

Assessment Methodology

- 8.4.5 The EIA assessment will be supported by an initial collation and review of available baseline data for the Supplementary PEI Report, the previously published June 2025 PEI Report and the ES.
- 8.4.6 To fully inform the assessment of agricultural land and soils, the ALC and soil survey described in section 8.3.2 is being undertaken. This will be in accordance with the Soil Survey Field Handbook (Ref 13) and the ALC guidelines (Ref 7) and will characterise soil properties based on an examination of soil profiles, from which agricultural land grade as well as soil resilience can be calculated and assessed and this information will be presented in the ES.
- 8.4.7 In addition, to inform the assessment of farm holdings, broad data on agricultural landholdings will be collected through on-going discussions by the Project Lands Team with landowner/occupiers or land agents. A preliminary overview of landowner/occupier information has been used to inform the preliminary assessment and a further assessment will be presented in the ES based on the level of information gained and with a focus on any land uses which may be considered more sensitive (such as orchards, high value cropping systems or livery stables). The assessment in relation to landholdings takes account of the statutory framework associated with financial compensation for disruption and temporary/permanent loss of land (in accordance with the compensation code) which would include consideration of any active agri-environment and/or forestry/woodland schemes.
- 8.4.8 The Institute of Environmental Management and Assessment (IEMA) guidance (Ref 12) will be used to assess the impact on agriculture and soils. The DMRB LA112 (Ref 14) will be used to assess the impact on agricultural land holdings.

- 8.4.9 **Table 8.2** to **Table 8.6** set out the criteria which would be used to determine the sensitivity of and the magnitude of impacts on agricultural land and soils through assessing soil quality, BMV land and agricultural landholdings. Significance is derived from a consideration of both sensitivity and magnitude as shown in **Table 8.2**.

Table 8.2 Determination of sensitivity of typical soil resource/functions

Receptor Sensitivity	Description
Very High	<p>Biomass production: ALC Grades 1 and 2.</p> <p>Ecological habitat, soil biodiversity and platform for landscape: soils supporting protected features within a European site (e.g., Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar); peat soils; soils supporting a National Park, or Ancient Woodland.</p> <p>Soil carbon: Peat soils; soils with potential for ecological/landscape restoration.</p> <p>Soil hydrology: very important catchment pathway¹ for water flows and flood risk management.</p> <p>Archaeology, cultural heritage, community benefits and geodiversity: scheduled monuments and adjacent areas; World Heritage and European designated sites; soils with known archaeological interest; soils supporting community/recreational/educational access to land covered by National Park designation.</p> <p>Source of materials: important surface mineral reserves that would be sterilised (i.e., without future access).</p>
High	<p>Biomass production: ALC Grade 3a.</p> <p>Ecological habitat, soil biodiversity and platform for landscape: soils supporting protected features within a UK designated site (e.g., United Nations Educational, Scientific and Cultural Organisation (UNESCO), Geoparks, Site of Special Scientific Interest (SSSI) or Areas of Outstanding National Beauty (AONB)², Special Landscape Area, and Geological Conservation Review sites); native forest and woodland soils; unaltered soils supporting semi-natural vegetation (including United Kingdom Biodiversity Action Plan (UKBAP) Priority habitats).</p> <p>Soil carbon: Organo-mineral soils (e.g., peaty soils).</p> <p>Soil hydrology: Important catchment pathway¹ for water flows and flood risk management.</p> <p>Archaeology, cultural heritage, community benefits and geodiversity: soils with probable (e.g. where an archaeological site is likely to exist based on previous research/assessment) but as yet unproven (prior to being revealed by construction) archaeological interest; historic parks and gardens; Regionally Important Geological</p>

¹ As defined by the site and catchment characteristics according to the professional judgement of a catchment hydrologist.

² Area of Outstanding Natural Beauty (AONB) is now referred to as National Landscapes.

Receptor Sensitivity	Description
	<p>Site (RIGS); Soils supporting community/recreational/educational access to RIGS and AONBs².</p> <p>Source of materials: surface mineral reserves that would be sterilised (i.e. without future access).</p>
Medium	<p>Biomass production: ALC Grade 3b.</p> <p>Ecological habitat, soil biodiversity and platform for landscape: soils supporting protected or valued features within non-statutory designated sites (e.g. Local Nature Reserves (LNR), Local Geological Sites (LGSs), Sites of Nature Conservation Importance (SNCIs), Special Landscape Areas; non-native forest and woodland soils.</p> <p>Soil carbon: mineral soils with elevated soil carbon resulting from land management practices such as addition of organic amendments or minimisation of soil disturbance (for example under long-term pasture).</p> <p>Soil hydrology: important minor catchment pathway¹ for water flows and flood risk management.</p> <p>Archaeology, cultural heritage, community benefits and geodiversity: soils with possible (e.g. where professional judgement but as yet unproven (prior to being revealed by construction) archaeological interest; soils supporting community/recreational/educational access to land.</p> <p>Source of materials: surface mineral reserves that would remain accessible for extraction.</p>
Low	<p>Biomass production: ALC Grades 4 and 5</p> <p>Ecological habitat, soil biodiversity and platform for landscape: soils supporting valued features within non-designated notable or priority habitats/landscapes. Agricultural soils.</p> <p>Soil carbon: mineral soils.</p> <p>Soil hydrology: Pathway¹ for local water flows and flood risk management</p> <p>Archaeology, cultural heritage, community benefits and Geodiversity: soils supporting no notable cultural heritage, geodiversity nor community benefits; soils supporting limited community/recreational/educational access to land.</p> <p>Source of materials: surface mineral reserves that would remain accessible for extraction.</p>
Negligible	<p>As for low sensitivity, but with only indirect, tenuous, and unproven links between sources of impact and soil functions</p>

Table 8.3 Determination of sensitivity of soils in handling

Soil Texture, Field Capacity Days (FCD) and Wetness Class (WC) ³	Soil Texture, Field Capacity Days (FCD) and Wetness Class (WC)
High Sensitivity (low resilience to structural damage)	Soils with high clay and silt fractions (clays, silty clays, sandy clays, heavy silty clay loams and heavy clay loams) and organo-mineral and peaty soils where the FCD are 150 or greater; Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where the FCDs are 225 or greater; and All soils in wetness class (WCV or WCVI).
Medium Sensitivity (medium resilience to structural damage)	Clays, silty clays, sandy clays, heavy silty clay loams, heavy clay loams, silty loams and organo-mineral and peaty soils where the FCDs are fewer than 150; Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where FCDs are fewer than 225; and Sands, loamy sands, sandy loams, and sandy silt loams where the FCDs are 225 or greater or are in wetness classes WCIII and WCIV.
Low sensitivity (high resilience to structural damage)	Soils with a high sand fraction (sands, loamy sands, sandy loams, and sandy silt loams) where the FCDs are fewer than 225 and are in wetness classes WCI to WCII.

Table 8.4 Determination of sensitivity of agricultural land holdings

Receptor Sensitivity	Description
Very High	Agricultural land holdings: 1) Areas of land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on a frequent basis (daily).
High	Agricultural land holdings: 1) Areas of land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on a frequent basis (weekly).
Medium	Agricultural land holdings:

³ The terminology high, medium and low sensitivity is used to describe potential risk of damage to a soil structure. Furthermore, a soil with high sensitivity is at high risk to damage and has a low resilience to structural damage. This terminology is directly referred to in the IEMA Guidance (Ref 12)

Receptor Sensitivity	Description
	1) Areas of land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly).
Low	Agricultural land holdings: 1) Areas of land which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure; and 2) Access between land and key agricultural infrastructure is required on an infrequent basis (monthly or less frequent).
Negligible	Agricultural land holdings: 1) Areas of land which are infrequently used on a non-commercial basis.

Table 8.5 Determination of magnitude criteria for impact on agricultural land and soils

Magnitude of Impact (Change)	Description of Impacts Restricting Proposed Land Use
Large	Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading), over an area of more than 20 ha or loss of soil-related features set out in Table 8.3 , as advised by other topic specialists in EIA team (including effects from 'Temporary Developments' ⁴); or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of more than 20 ha or gain in soil-related features set out in Table 8.3 , as advised by other topic specialists in EIA team (including effects from 'Temporary Developments' ⁵).
Medium	Permanent, irreversible loss of one or more soil functions or soil volumes, over an area of between 5 and 20 ha or loss of soil-related features set out in Table 8.3 as advised by other topic specialists in EIA team (including effects from 'Temporary Developments' ⁴); or Potential for improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of between 5 and 20 ha or gain in soil-related features set out in Table 8.3 , as advised by other topic specialists in EIA team.
Small	Permanent, irreversible loss over less than 5 ha or a temporary, reversible loss of one or more soil functions or soil volumes), or

⁴ Temporary development can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils.

⁵ Temporary development can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils.

Magnitude of Impact (Change)	Description of Impacts Restricting Proposed Land Use
	<p>temporary, reversible loss of soil related features set out in Table 8.3 above, as advised by other topic specialists in EIA team;</p> <p>or</p> <p>Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of less than 5 ha or a temporary improvement in one or more soil functions due to remediation or restoration or off-site improvement, or temporary gain in soil-related features set out in Table 8.3, as advised by other topic specialists in EIA team.</p>
Negligible	No discernible loss or reduction or improvement of soil functions or soil volumes that restrict current or proposed land use.

Table 8.6 Determination of magnitude criteria for impact on agricultural land holdings

Magnitude of impact (Change)	Description of Impacts restricting proposed land use
Large	<p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <p>1) Loss of resource and/or quality and integrity of resource; Severe damage to key characteristics, features or elements. e.g., direct acquisition and demolition of buildings and direct development of land to accommodate highway assets; and/or</p> <p>2) Introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision.</p>
Medium	<p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <p>1) Partial loss of/damage to key characteristics, features or elements, e.g., partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings; and/or</p> <p>2) Introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision</p>
Small	<p>Private property and housing, community land and assets, development land and businesses and agricultural land holdings:</p> <p>1) A discernible change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements, e.g., amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property, businesses, community assets or agricultural holdings; and/or</p> <p>2) Introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision.</p>

Magnitude of impact (Change)	Description of Impacts restricting proposed land use
Negligible	Private property and housing, community land and assets, development land and businesses and agricultural land holdings: 1) Very minor loss or detrimental alteration to one or more characteristics, features or elements. e.g., acquisition of non-operational land or buildings not directly affecting the viability of property, businesses, community assets or agricultural holdings; and/or 2) Very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision.
No Change	No loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction.

- 8.4.10 Significance would be derived using the matrix set out in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**. An effect determined to be moderate or above would be deemed significant.

8.5 Assumptions and Limitations

- 8.5.1 The assessment has been undertaken based on the preliminary Project design information as set out in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**. This is an iterative process and the assessment will be updated in the ES as the design evolves and any changes are made. These updates may lead to changes in areas of land-take and soil disturbance, both of which will be accounted for in the assessment presented in the ES.
- 8.5.2 For the preliminary assessment, it is assumed that all areas temporarily disturbed during construction would be reinstated and the existing land use resumed. Permanent land take relates to the Cable Sealing End (CSE) compounds, pylon bases, permanent access roads and substations. All areas will be reassessed in the ES based on the final design presented with the application for development consent.
- 8.5.3 These key parameters and assumptions will be reviewed based on the design presented in the Development Consent Order (DCO) application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.
- 8.5.4 The preliminary assessment of agricultural land quality is based upon the Provisional ALC map which does not differentiate between Grade 3a (BMV) and 3b (non BMV). Therefore, where Provisional ALC Grade 3 has been identified within the draft Order Limits a worst-case scenario has been assumed so this land has been assessed as 3a for the purpose of assessing any significant effects. A detailed ALC survey will split the Provisional ALC Grade 3 into 3a and 3b and be assessed prior to the completion of the ES.
- 8.5.5 To inform the assessment of impacts on farm holdings, broad data on agricultural landholdings will be collected through on-going discussions by the Project's Lands Team with landowner/occupiers or land agents. A preliminary overview of

landowner/occupier information has been used to inform the preliminary assessment. This does not, for the Supplementary PEI Report and the previously published June 2025 PEI Report, include an assessment of individual landholdings in terms of viability (such as disruption or proportion of landholding taken temporarily or permanently). An assessment will be presented in the ES based on the level of further information gained and with a focus on the permanent impacts and on any land uses which may be considered more sensitive (such as orchards, high value cropping systems or livery stables). The assessment in relation to landholdings takes account of the framework associated with financial compensation for disruption and temporary/permanent loss of land (in accordance with the compensation code) which would include consideration of any active agri-environment and/or forestry/woodland schemes.

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9. Traffic and Movement

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9. Traffic and Movement

9.1 Overview

- 9.1.1 This Appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Traffic and Movement assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.

9.2 Guidance Specific to Traffic and Movement Assessment

- 9.2.1 The primary guidance which has informed the assessment approach which underpins the Supplementary PEI Report, the June 2025 PEI Report and the subsequent ES, is the Institute of Environmental Management and Assessment Guidance for the Environmental Assessment of Traffic and Movement (Ref 2).

9.3 Data Sources

- 9.3.1 The baseline assessment is informed by desk studies and site surveys. The baseline desk studies use publicly available data and literature, together with data requested from local authorities. Additional survey data has been collected to inform this assessment. The following data has been used to inform the Traffic and Movement assessment:
- i. Details of the highway network, including identification of potential constraints on the highway network, on-street parking, visibility constraints or capacity issues on roads and junctions of the Primary Access routes, obtained from Ordnance Survey open map, Google Maps imagery of the network and OpenStreetBrowser;
 - ii. Public transport information on highway links, including bus routes and bus stops obtained from the Local Authorities/transport operators' websites, traveline.info and Google Maps imagery of the highway network;
 - iii. Railway routes and timetable information obtained from the National Rail website;
 - iv. Details of waterways obtained from Environment Agency, Navigation Authority and The Inland Waterway Association;
 - v. Designated non-motorised user routes for pedestrians, cyclists and equestrians and Public Rights of Way (PRoW) obtained from Sustrans and Local Authority Definitive/PRoW map(s);

- vi. Other promoted/recreational routes for pedestrians obtained from the Long Distance Walkers Association and through stakeholder engagement undertaken to date;
- vii. Annual Average Daily Traffic (AADT) flows obtained from the Department for Transport (DfT) traffic count data for 2023 on highway links that form the access routes to/from the Project where available;
- viii. Traffic count data from surveys undertaken for the Project – the surveys record road users, pedestrians, cyclists and equestrians as required with Automatic Traffic Count (ATC) data/PRoW count data collected in August and October 2024;
- ix. Traffic Regulation Orders restricting movement and constraints such as height and weight restrictions as viewed on Google Maps;
- x. Personal Injury Collision (PIC) accident data over a five year period for all the roads and junctions on the Primary Access Routes, from STATS19 database (DfT);
- xi. Traffic growth factors obtained from the Trip End Model Presentation Program (TEMPro)/National Trip End Model; and
- xii. Identification of pedestrian, cycle and horse-riding infrastructure provision along the highway links, obtained from Google Maps imagery of the highway network.

9.4 Approach to Traffic and Movement Assessment

Scope of Assessment

- 9.4.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 3) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 4). The scope has also been informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Traffic and Movement chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 9.4.2 Non statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 5). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 9.4.3 The scope of the construction assessment considers potential effects upon a range of receptor groups in accordance with the Institute of Environmental Management and Assessment (IEMA) guidance which is based on the impacts upon the following transport infrastructure: highways (including footpaths and cycleways), railways, waterways, PRoW and promoted/recreational routes. The receptors assessed and potential effects considered are summarised in **Table 9.1**.

Table 9.1 Scope of Traffic and Movement Assessment

Receptor	Potential effects
Highway Network (including footways and cycleways)	
Road users	Effects as a result of construction traffic and road closures/diversions leading to potential severance, driver delay and highway safety effects. Effects as a result of the movement of abnormal and hazardous loads during construction.
Public transport users (bus)	Effects as a result of construction traffic and road closures/diversions leading to potential journey time delays.
Pedestrians and cyclists	Effects as a result of construction traffic leading to severance and pedestrian/cycle delay. Effects on footway closures/diversions leading to severance and/or increased journey time. Effects of general construction works leading to a decline in pedestrian and cycle amenity ¹ and additional fear and intimidation.
Railways	
Railway users	Effects upon users of the rail network due to potential impacts upon railway infrastructure.
Navigable Waterways	
Waterway users	Effects upon users of navigable waterways due to temporary closures leading to reduced access/increased journey time.
Public Rights of Way and Promoted/Recreational Routes	
Pedestrians, Cyclists and Equestrians	Effects as a result of route closures/diversions leading to potential increased journey time. Effects due to a decline in pedestrian and cycle amenity due to interaction with traffic.

- 9.4.4 The EIA Scoping Report Traffic and Movement chapter sought to scope out effects associated with the operation of the Project, however it is noted the Scoping Opinion received requested further information relating to operational traffic to support this position. The Supplementary PEI Reports therefore provide an initial assessment of potential effects during operation. The scope of the operational assessment also considers potential effects on users of PRoW and promoted/recreational routes, i.e. pedestrians, cyclists and equestrians.

Study Area

- 9.4.5 The Traffic and Movement Study Area for the Project comprises highway links used to provide access for construction vehicles and considers the impacts to traffic, bus routes and pedestrian/cycle routes along these highway access routes, thereby

¹ Pedestrian amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, composition and pavement width/separation from traffic.

informing assessment the effects on the users of these routes. The Study Area for Highway Links is defined in further detail below.

- 9.4.6 The Study Area also includes pedestrian/cycle/equestrian routes and PRow networks, railways and waterways that are crossed by the draft Order Limits.

Highway Links

- 9.4.7 Within each Section, **Supplementary PEI Report Figure 9.1 Overall Context Map** provides the wider Project context showing the Strategic Road Network (SRN)² and main A roads that provide access to all Sections of the Project. Construction traffic has been assigned based upon an assessment of the connection points between the works areas within the draft Order Limits and the road network, and the most suitable/likely routes that will be used to access the draft Order Limits. This approach is based upon identification of bellmouths, Primary Access Routes and Worker Access Routes, which are defined in **Table 9.2**. The access routes and proposed Section Study Areas are shown in the **Supplementary PEI Report Figure 9.2 Primary Access Routes (PAR) and Workers Access Routes**.

Table 9.2 Distribution of Project Traffic – Definitions

Accesses used by Project traffic	Definition
Bellmouths	Access points (junctions) from the existing highway network, facilitating access to construction compounds and site haul roads.
Primary Access Routes	Identified as a series of roads and junctions, between the SRN and the bellmouths, suitable for access by large construction vehicles, that are planned to be used by HGVs. Identification of these routes is based on existing conditions, potential for improvements and professional judgement.
Worker Access Routes	Identified as a series of additional roads and junctions which are not promoted as construction HGVs routes but could be used by workers to travel to site. These are identified as likely routes between residential areas, key employment/skills centres and the bellmouths.

Construction Traffic Routes - HGVs

- 9.4.8 Initial construction information (including construction traffic, compound locations, bellmouth accesses and haul roads) has been used to determine the Primary Access Routes which form the basis of the initial assessment presented in this Supplementary PEI Report and the June 2025 PEI Report. Primary Access Routes have been developed using the following criteria where possible:
- Construction traffic would access site bellmouths via Primary Access Routes along the local road network. The Primary Access Routes would then connect to an appropriate close junction with the SRN and/or classified road network. Whilst

² The Strategic Road Network is the national network of trunk motorways and major all-purpose trunk roads maintained and operated by National Highways

it is acknowledged that the SRN is part of the classified road network, the report makes a distinction between the two because of the capacity of the SRN to carry trunk road traffic and abnormal loads.

- ii. From the site bellmouths, construction vehicles would be routed off the public highway along haul roads to access the construction compounds and construction areas. Haul roads are temporary in nature and will be decommissioned and associated land reinstated upon completion of the construction phase. Haul roads and permanent access roads are illustrated on **Supplementary PEI Report Volume 2 Part B Figure 1.2 Temporary and Construction Features** and **Figure 1.3 Permanent and Operational Features** respectively.
- iii. Shorter available routes between the SRN/classified road network and site access bellmouths have been selected where possible, balancing distance and suitability of links to accommodate construction traffic.
- iv. Existing known highway constraints, such as road geometry, height and weight restrictions, junction arrangement and other physical constraints have been avoided where possible.
- v. Settlements and sensitive locations such as schools or hospitals have been avoided where possible to reduce potential effects on receptors.

9.4.9 Primary Access Routes are formed of one or more roads within the road network between the SRN/classified road network and the site access bellmouths. The Primary Access Routes are made up of Core Routes (CR series), which are the main A roads providing connections across the wider Study Area, and Local Links (LK series), which are roads providing local access from the Core Routes to the individual bellmouth accesses.

9.4.10 Primary Access Routes will be discussed with the relevant Local Highway Authority to confirm their suitability to accommodate HGVs. Any new or alternative Primary Access Routes identified post statutory consultation will be considered and subject to a feasibility assessment. The final construction routes will be assessed in the ES which will accompany the Development Consent Order (DCO) application.

9.4.11 Some of the Primary Access Routes will form future access to the Project for operation and maintenance of the Project. An initial assessment of likely operational impacts has been undertaken within the Supplementary PEI Report based on comments received within the Scoping Opinion (Ref 3). The identified Study Area is therefore the same for operation of the Project.

Construction Traffic Routes – Worker Access Routes

9.4.12 In addition to the Primary Access Routes, construction workers cars/LGVs are also likely to use the wider highway network, including various links which are not planned to be used by HGVs to access the Project. Therefore, additional access routes have been identified that construction workers are expected to use (W series), which provide access from local urban areas where workers are assumed to live.

Assessment Scenarios

9.4.13 Based on the proposed construction programme for the Project, the peak year for construction activities that would affect each highway link providing access to the

Project has been identified as 2031. The following scenarios have therefore been initially assessed to determine the impact of the Project:

- i. 2031 Future Baseline ('Without Development') – daily flows (AADT); and
- ii. 2031 Future Baseline plus Construction ('With Development') – daily flows (AADT).

- 9.4.14 A Baseline scenario (2024) has been used as the basis for developing the future baseline (2031) traffic flows. For the Supplementary PEI Report assessment and the June 2025 PEI Report, an initial future baseline has been established applying background traffic growth (using TEMPro traffic growth factors for the geography that applies to the section/area). This future baseline will be refined within the ES to take account of committed developments and transport schemes to avoid double counting of future growth. The future baseline traffic flows form the basis for assessing the impacts and effects of the Project for the 'Without Development' and 'With Development' scenarios referenced above.
- 9.4.15 The 'With Development' scenario considers the 2031 background traffic flows (future baseline), in conjunction with the peak construction activities from the overall construction programme (whenever these may occur).
- 9.4.16 The ES will consider a 'With Cumulative Impact' scenario alongside the 2031 'With Development' scenario and include committed development agreed with the Local Highway Authorities (this may include schemes that are not yet committed but considered to be sensitive to the assessment).
- 9.4.17 To date, developments which are proposed to be considered within the Cumulative Effects Assessment are listed in **Supplementary PEI Report Volume 3 Appendix 4B Environmental Impact Assessment Methodologies and Scope Annex A Developments for Consideration Within the Future Baseline** and include Eastern Green Link 3 and 4 and the Outer Dowsing have been identified.
- 9.4.18 To clarify, the cumulative effects assessment has not yet been completed but will be considered within the ES.

Assessment Methodology

Construction

- 9.4.19 The assessment of construction effects in the Supplementary PEI Report and the June 2025 PEI Report is based on the construction traffic access routes identified to be used by Heavy Goods Vehicles (HGVs) and workers cars/Light Goods Vehicles (LGVs) during the construction of the Project and the preliminary construction traffic forecasts. This preliminary construction traffic is presented in **Supplementary PEI Report Volume 2 Part B Appendix 9B Preliminary Construction Information** and the June 2025 PEI Report.
- 9.4.20 The IEMA guidance assesses the effect on users by assessing the transport infrastructure upon which they rely.
- 9.4.21 For the 2031 future baseline year, the magnitude of impact is provided as the percentage increase in total traffic and HGVs associated with the Project along each highway link providing access to the Project and has been used to undertake an initial assessment on the effect on traffic levels, based on IEMA guidance. The IEMA guidance provides a screening criteria under Rules 1 and 2 to identify areas where

effects associated with the Project should be subject to further assessment, to understand if the Project would give rise to any significant effects:

- i. Rule 1: include highway links where traffic flows will increase by more than 30 per cent (or the number of HGVs will increase by more than 30 per cent); and
- ii. Rule 2: include highway links of high sensitivity where traffic flows have increased by 10 per cent or more.

- 9.4.22 Increases below 10 per cent are considered not significant, given that daily variations in background traffic flow would usually fluctuate by this amount. Therefore, changes in traffic flow below this level are assumed to result in no discernible environmental effects. These highway links will not be assessed in the ES (although there will be a review to confirm the position following any design changes made post statutory consultation).
- 9.4.23 For the purposes of the Supplementary PEI Report and the June 2025 PEI Report, the assessment determines highway links where Rule 1 or Rule 2 applies and if the above screening criteria are met, confirms that further environmental assessment will be undertaken and presented in the ES. Highway links have therefore been assessed to determine where traffic flows (or proportion of HGVs) are expected to increase by 30 per cent or more, and where there are increases of 10 per cent or more in an area identified high or very high sensitivity.
- 9.4.24 Sensitive areas are those where there is a presence of sensitive receptors as defined by the IEMA Guidance, as well as consideration of congestion and accident data. Sensitive areas have been identified and are defined by the presence of sensitive receptors such as built-up areas (including hospitals, residential properties, community facilities, schools), or collision clusters and routes with road safety concerns, or junctions and highway links at (or over) capacity. The sensitive receptors include all users of the highway in these areas. The criteria to determine sensitivity of receptors is as set out in Table 9.3.

Table 9.3 Sensitivity of Receptors

Sensitivity	Description
Very High	<p>Highway links and junctions: more than two sensitive users locations present (e.g. schools, care/retirement homes, disabled parking bays, hospitals, places of worship, recreational/tourist and retail areas, routes with poor safety and congestion)</p> <p>Walk/cycle/bridleway links including PRoW: heavily trafficked highways with on-road pedestrian/cycle/bridleway routes</p>
High	<p>Highway links and junctions: two sensitive user locations present (e.g. schools, care/retirement homes, disabled parking bays, hospitals, places of worship, recreational/tourist and retail areas, routes with poor safety and congestion)</p> <p>Walk/cycle/bridleway links including PRoW: lightly trafficked highway with on-road pedestrian/cycle/bridleway routes</p>
Medium	<p>Highway links and junctions: at least one of the following:</p> <ul style="list-style-type: none"> one sensitive user location present (e.g. schools, care/retirement homes, disabled parking bays, hospitals, places of worship,

Sensitivity	Description
	<p>recreational/tourist and retail areas, routes with poor safety and congestion);</p> <ul style="list-style-type: none"> many residential properties with direct frontage to the highway link being used for construction traffic; pedestrians using footways, PRow and/or crossings on highway link; and cyclists using on-road designated cycle routes along highway link. <p>Walk/cycle/bridleway links including PRow: heavily trafficked highway with off-road pedestrian/cycle/bridleway routes</p>
Low	<p>Highway links and junctions: at least one of the following:</p> <ul style="list-style-type: none"> few residential properties with direct frontage to the highway link being used for construction traffic; workplaces with direct frontage to the highway link being used for construction traffic; and cyclists using off-road designated cycle routes along highway link. <p>Walk/cycle/bridleway links including PRow: lightly trafficked highway with off-road pedestrian/cycle/bridleway route</p>
Negligible	<p>Highway links and junctions: no receptors on link</p> <p>Walk/cycle/bridleway links including PRow: pedestrian/cycle/bridleway route not running alongside carriageway</p>

- 9.4.25 In addition, the sensitivity of a link considers the location of collision clusters which has been determined by the following criteria:
- a location where there are nine or more injury collisions occurring within a junction or a 100 m stretch; and
 - a location with four or more fatal and/or serious collisions happening either within a junction or within a 100 m stretch.
- 9.4.26 On routes where the screening criteria are met (10 per cent increase in AADT or HGV AADT on sensitive routes or 30 per cent on other routes) and the potential effects are considered significant within the Supplementary PEI Report, these routes will be discussed with the local authorities and may be subject to more detailed assessment within the ES.
- 9.4.27 At this stage of assessment, some identified construction traffic access routes are identified that do not have baseline data (either DfT counts or 2024 surveys). For these routes a qualitative analysis is identified to consider whether the volume of construction traffic is likely to be significant given the type of road and type of construction vehicles (HGVs or Workers cars/vans). These links will be considered further within the TA and ES if the total number of all construction vehicles exceeds 50 per day or the number of HGVs exceeds 20 per day. These highway links will be discussed with the Local Highway Authority and additional data collected for the TA and ES if required.
- 9.4.28 A qualitative assessment of impacts to bus users is undertaken based on the projected increase in traffic flows as a result of the Project and potential impact to bus services. More detailed assessment will be provided within the ES if the projected

increase in traffic flows on the highway links where bus services operate exceed the IEMA Guidance screening criteria defined above.

- 9.4.29 A qualitative assessment of impacts to railway users and waterway users during construction is undertaken based on any identified requirement to restrict access or close these routes to enable construction of the Project. An initial assessment of sensitivity is based on consideration of the likely numbers of users of the infrastructure; for railways this is considered High as there are likely to be high numbers of passengers, for waterways this is considered Low as the number of users will likely be less. More detailed assessment, where required, will be provided in the ES following further consultation with the infrastructure operators.
- 9.4.30 A qualitative assessment of impacts to pedestrians and cyclists is undertaken based on the projected increase in traffic flows as a result of the Project during construction and potential impacts upon pedestrians and cyclists using the affected highway routes. More detailed assessment will be provided in the ES where the projected increase in traffic flows exceed the IEMA Guidance criteria and the impact thresholds defined with the Scoping Report or if required by the highway authority.
- 9.4.31 In addition, PRoW and promoted/recreational routes that are expected to be crossed by works within the overhead line route are identified and qualitative assessment of impacts to pedestrians, cyclists and equestrians undertaken where routes are anticipated to require temporary diversion or closure. The significance of effects on PRoW and promoted/recreational routes is determined through professional judgement based on the sensitivity (national, regional, local importance and potential usage of the routes) and magnitude of impact based on requirement for crossing, diversion or closures of routes. More detailed assessment will be provided within the ES where requested by the local authority.
- 9.4.32 A high-level summary of potential effects (without mitigation) on roads and PRoW is provided within each chapter based on professional judgement and experience on other similar National Grid Electricity Transmission plc (National Grid) projects. Residual effects will be assessed and reported in the ES.

Operation and Maintenance

- 9.4.33 The Scoping Report Traffic and Movement chapter scoped out effects associated with operation of the Project, however it is noted that the Scoping Opinion (Ref 3) requested further information relating to traffic associated with operation of the Project. The Supplementary PEI Report and the June 2025 PEI Report assessments therefore presents details of forecast operational traffic movements and provides an initial assessment of potential effects based on a subjective view on whether the forecast volume of traffic is considered high or not.
- 9.4.34 As with impacts during construction, a qualitative assessment of impacts to bus users, railway users, waterway users and users of PRoW is undertaken for potential impacts during operation of the Project.

Further Assessment within the ES

- 9.4.35 The Supplementary PEI Report and the June 2025 PEI Report provides preliminary assessment based on the development of the Project to date and data gathered and analysed at this point. The assessment assigns value (sensitivity) to receptors as well as criteria for assigning impact magnitude. The criteria consider the scale/extent of the predicted change and the nature of the impact. The factors are combined to give

an overall significance of effect and determine where more detailed assessment is required in the ES.

The ES will:

- i. Include an assessment of the following, as per the IEMA guidance:
 - severance of communities;
 - road vehicle driver and passenger delay;
 - non-motorised user³ delay;
 - non-motorised user amenity;
 - fear and intimidation on and by road users;
 - highway safety; and
 - hazardous/dangerous loads.
- ii. Assess potential delay to emergency services, public transport users and impact of PRow and promoted/recreational route diversions and/or closures.
- iii. Include updated construction traffic route details based on the design presented in the DCO application.
- iv. Provide further baseline data, including traffic and non-motorised users, which will be collected in 2025 where earlier surveys were not undertaken and/or on routes forming alternative access routes and/or haul route crossings. These will be discussed with the relevant Local Highway Authorities.
- v. Report on usage of footways, cycleways, bridleways and navigable waterways obtained through surveys undertaken in August and October 2024 and 2025 to inform the ES.
- vi. Include any additional information received from local planning authorities such as committed developments and transport schemes to inform the assessment within the ES.
- vii. Include construction and operational traffic flows obtained for Eastern Green Link 3 and 4 projects for cumulative sensitivity testing.
- viii. Include any modelling and mitigation requirements. Potential significant effects on routes identified in the Supplementary PEI Report are taken as a starting point and may need further assessment, subject to discussions with the relevant local authorities.

9.5 Assessment Assumptions and Limitations

9.5.1 The following limitations and assumptions have been identified for the assessment:

- i. Construction traffic forecasts are based on an initial high-level estimate of construction materials and programme for the developing design as of Q4 2024. These are considered to provide a reasonable scenario for assessment. It is considered that these limitations do not affect the robustness of the

³ Whilst the IEMA Guidance refers to non-motorised users (NMU), the PEIR assessment focusses on the impact on each receptor, i.e. pedestrians, cyclists and equestrians, which falls within the general definition.

Supplementary PEI assessment or the June 2025 PEI Report, but further assessment within the Environmental Statement (ES) may be required, following further stakeholder engagement and design refinement.

- ii. The baseline assessment is informed by desk studies and site surveys. The baseline desk studies use publicly available data and literature, together with data requested from local authorities. Further details of existing highway constraints will be determined through ongoing discussions with the Local Highway Authorities as part of the scheme development to inform the TA and ES.
- iii. An assessment has been undertaken to identify the percentage increase in total and HGV Annual Average Daily Traffic flows (AADT) as a proportion of background traffic flows on the local road network against a future baseline. This preliminary assessment does not consider trips related to committed schemes that is anticipated to result in an increased future baseline therefore providing a robust initial assessment.
- iv. It is anticipated that all construction traffic would access the draft Order Limits from the Primary Access Routes along the local highway network. The Primary Access Routes would connect to the Strategic Road Network (SRN) and classified (A or B) road network, i.e. those routes between major settlements and ports/airports across Great Britain.
- v. Construction HGV traffic is distributed via local roads on to the SRN for wider access to strategic routes that could be used for construction materials/equipment.
- vi. Cars/light vehicles used by Construction Workers to access substations have been distributed on to the local road network using a gravity model approach. This is based on the population-distance gravity model for an approximate drivetime of up to 75-90 minutes applying a sensitivity factor to increase the likelihood of travel from local origin points. Construction workers will access the substations via additional routes that are not used by construction HGVs.
- vii. Considering the relative low number of Construction Worker traffic generation by individual bellmouths and the information available at the time of writing, Construction Worker traffic to individual bellmouths has not been assigned to the road network. However, an uplift of 100 per cent has been applied to the HGV trips generated by bellmouths to provide a margin at this stage to consider the potential impact from Construction Worker trips.
- viii. No administrative staff, visitors, or additional tradesmen to compounds during the construction period have been separately accounted for. However, the 100 per cent uplift to bellmouth traffic and a 50 per cent uplift to substation traffic has been applied to account for these potential additional trips at this early stage.
- ix. An Abnormal Indivisible Load (AIL) is a vehicle that is either:
 - a. a weight of more than 44 tonne;
 - b. an load of more than 10 tonne for a single non-driving axle or 11.5 tonne for a single driving axle;
 - c. a width of more than 2.9 metres; and/or
 - d. a rigid length of more than 18.65 metres.

- x. The requirements and routing of AILs is still being determined and therefore not available at this stage.
- xi. The Study Area for each Section of the Project comprises the highway links providing access to the Section Substation and/or overhead line route, however, the assessment presents construction traffic flow data on these routes along with construction traffic flow data for all Sections of the Project that use the same highway links. Therefore, there will be some overlap of data presented within individual Section chapters as these same highway links provide access to multiple Sections of the Project.
- xii. Where the overhead line route crosses railways, it is assumed that closures required to facilitate stringing will be overnight. The details of these closures will be agreed with Network Rail.
- xiii. Details of PRoW have been obtained from the Local Authorities. Additional promoted/recreational routes have been identified through the desk-top study and stakeholder engagement undertaken to date. Further engagement will be undertaken to identify any additional routes that may be relevant.
- xiv. Initial traffic and PRoW surveys were undertaken in August 2024 and further surveys undertaken in October 2024 to enable an understanding of baseline conditions and inform the Supplementary PEI Report and the June 2025 PEI Report. Additional surveys will be undertaken in 2025 if required and presented within the Transport Assessment (TA) and ES.
- xv. Base traffic surveys are representative of normal traffic conditions and construction traffic flows will be based upon a best estimate of likely requirements.
- xvi. At this stage, the Supplementary PEI Report and the June 2025 PEI Report assessments considers the impact of construction traffic on links forming the Primary Access Routes for construction HGVs and Workers Access Routes likely to be used by construction workers cars/LGVs. These are assessed to determine whether they meet the IEMA guidance Rule 1 or Rule 2, relating to the percentage impact on traffic flows. An initial assessment of route sensitivity has been undertaken based on professional judgement. More detailed assessment of environmental criteria, as set out within the IEMA guidance will be provided within the ES.
- xvii. A TA is being prepared and will form a technical annex to the ES.

9.5.2 These key parameters and assumptions will be reviewed based on the design presented in the DCO application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.

References

- Ref 1 National Grid Electricity Transmission (2025). Grimsby to Walpole Preliminary Environmental Information Report [online]. Available at: <https://www.nationalgrid.com/the-great-grid-upgrade/grimsby-to-walpole/document-library#4257225834-3023854277> [Accessed 12 September 2025].
- Ref 2 Institute of Environmental Management and Assessment (2023). Environmental Assessment of Traffic and Movement [online]. Available at: <https://www.iema.net/resources/blogs/2023/07/12/iema-guidance-ea-of-traffic-and-movement/> [Accessed 4 June 2024].
- Ref 3 The Planning Inspectorate (2024). Scoping Opinion: Proposed Grimsby to Walpole Project [online]. Available at: <https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020036-000109-Scoping%20Opinion%202017%20EIA%20Regs.pdf> [Accessed 10 February 2025].
- Ref 4 National Grid Electricity Transmission (2024). Grimsby to Walpole Environmental Impact Assessment Scoping Report [online]. Available at: <https://nsip-documents.planninginspectorate.gov.uk/published-documents/EN020036-000004-EN020036%20-%20Scoping%20Report%20Volume%201%20Main%20Report.pdf> [Accessed 10 February 2025].
- Ref 5 National Grid (2025). Stage 1 Consultation Feedback Report. Available at: <https://www.nationalgrid.com/document/560496/download> [Accessed 12 September 2025].

10. Noise and Vibration

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10. Noise and Vibration

10.1 Overview

- 10.1.1 This appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the completion of the preliminary Noise and Vibration assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.

10.2 Guidance Specific to Noise and Vibration Assessment

- 10.2.1 Relevant guidance and standards that have informed the Supplementary PEI Report are listed below and will also be taken into account as part of the assessment reported within the ES:
- i. BS 5228-1:2009+A1:2014. 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise' (BS 5228-1) (Ref 2);
 - ii. BS 5228-1:2009+A1:2014. 'Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration' (BS 5228-2) (Ref 3);
 - iii. Calculation of Road Traffic Noise 1988 (CRTN) (Ref 4);
 - iv. Design Manual for Roads and Bridges LA 111: Noise and Vibration (DMRB LA 111) (Ref 5);
 - v. BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' (BS 4142) (Ref 6);
 - vi. BS 7445-1:2003 'Description and measurement of environmental noise. Guide to quantities and procedures' (BS 7445) (Ref 7);
 - vii. BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' (BS 8233) (Ref 8);
 - viii. ISO 9613-2:2024 'Acoustics – Attenuation of sound during propagation outdoors. Part 2: Engineering method for the prediction of sound pressure levels outdoors' (ISO 9613) (Ref 9); and
 - ix. Association of Noise Consultants BS 4142:2014+A1:2019 Technical Note (ANC Guidance) (Ref 10).

10.3 Data Sources

- 10.3.1 The following data has been used to inform the baseline conditions:

- i. Ordnance Survey (OS) AddressBase Plus data, as presented within **Supplementary PEI Report Volume 2 Part B Figure 10.1 Noise and Vibration Study Area**;
- ii. Department for Environment, Food and Rural Affairs (Defra) strategic noise mapping, presented as noise contours within **Supplementary PEI Report Volume 2 Part B Figure 10.2 Noise and Vibration Baseline**. This mapping represents the daytime ambient noise levels from road and rail sources and Noise Important Areas (NIAs);
- iii. Baseline noise survey data to inform the assessment of operational noise from the proposed substations; and
- iv. current OS mapping information.

10.4 Approach to Noise and Vibration assessment

Scope of the Assessment

- 10.4.1 The scope of the assessment was informed by the Scoping Opinion (Ref 13) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 14). The scope is also informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Noise and Vibration chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 10.4.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 15). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 10.4.3 **Table 10.1** identifies the receptors that are scoped in or out of the Noise and Vibration assessment. Those that are scoped out, reflect the position in the Scoping Opinion (Ref 13).

Table 10.1 Scope of the Noise and Vibration assessment

Receptor	Project phase(s)	Scoped in or out
Construction noise receptors	Construction	Scoped in
Construction vibration on people within buildings	Construction	Scoped in
Construction vibration on buildings and structures	Construction	Scoped in
Construction traffic	Construction	Scoped in
Operational noise from proposed operational plant (e.g. transformers) within proposed substations	Operation	Scoped in
Construction traffic vibration	Construction	Scoped out

Receptor	Project phase(s)	Scoped in or out
Operational noise impacts from auxiliary plant (e.g. back up generators and switchgear) within proposed substations	Operation	Scoped out
Operational noise from proposed overhead lines, on the basis that a low noise conductor system is proposed	Operation	Scoped out

- 10.4.4 The scope of the Noise and Vibration assessment includes consideration of effects due from:

Study Areas

Study Area for Construction Noise and Vibration

- 10.4.5 The assessment Study Areas for construction noise impacts comprises Noise Sensitive Receptors (NSR) within 300 m from construction works associated with the Project, excluding traffic on the public highway which is considered separately below. This is based on guidance in BS 5228-1:2009+A1:2014 Code of practice for Noise and Vibration control on construction and open sites – Part 1: Noise (BS 5228-1) (Ref 2) and the Design Manual for Roads and Bridges LA 111 Noise and vibration (DMRB LA 111) (Ref 5).
- 10.4.6 Noise from construction traffic on the existing road network has been assessed for each applicable road affected. The assessment considers the change in Basic Noise Level (BNL), calculated in line with the methodology described in Calculation of Road Traffic Noise 1988 (CRTN) (Ref 4), with a subsequent assessment of the impacts on NSR along existing routes where potential significant effects are identified in accordance with DMRB LA 111.
- 10.4.7 The assessment Study Area for construction vibration impacts, based on guidance from BS 5228-2:2009+A1:2014 Code of practice for Noise and Vibration control on construction and open sites – Part 2: Vibration (BS 5228-2) (Ref 3) and DMRB LA 111, comprises NSR within 100 m from construction activities with a potential to generate vibration, such as piling or compaction.

Study Area for Operational Noise

- 10.4.8 The assessment Study Area for operational noise comprises 1 km from the proposed substation, based on guidance from ISO 9613-2:2024 'Acoustics – Attenuation of sound during propagation outdoors. Part 2: Engineering method for the prediction of sound pressure levels outdoors' (ISO 9613) (Ref 9), with a particular emphasis on the closest NSR.
- 10.4.9 Operational noise from overhead lines is scoped out of the assessment on the basis that a low noise 'Triple Araucaria' conductor system is proposed. There is therefore no Study Area for operational noise from overhead lines.

Assessment Methodology

Defining Receptor Sensitivity

- 10.4.10 The sensitivity of NSR is determined partly on property type, for example residential properties are of a higher sensitivity than factories and offices.
- 10.4.11 Although all residential NSR are sensitive to Noise and Vibration, there are also cases where the sensitivity of an NSR may depend on the pre-existing noise climate. For example, NSR within existing high noise areas (such as NIAs) may be more sensitive to increases in noise than those outside NIA. NIA are determined via strategic noise maps and highlight the residential areas experiencing the highest 1 per cent of noise levels from road and rail sources in England. Consideration would be given to such instances as part of the assessment of construction traffic noise impacts.
- 10.4.12 The sensitivity of residential NSR is factored into the assessment methodologies, with medium and large magnitude impacts being considered as significant. However, additional consideration of sensitivity may be required in certain cases for non-residential NSR. The criteria used to determine the value and sensitivity of non-residential NSR specific to Noise and Vibration are set out in **Table 10.2**. These values are based on standard practice and World Health Organisation (WHO) guidance.

Table 10.2 Criteria for determining value/sensitivity – Non-residential NSR

Value/Sensitivity	Criteria
High	Schools and education premises, hospitals, clinics, care homes, places of worship, community centres, libraries, and dwellings within NIA (in relation to road traffic noise).
Medium	Areas primarily used for leisure activities including Public Rights of Way (PRoW), sports facilities and sites of historic or cultural importance, camp sites, hotels, gardens, and parks.
Low	Offices, cafes/bars with external areas.
Negligible	Industrial or retail premises.

Magnitude of Impacts

- 10.4.13 This section describes the impact magnitudes for the various noise and vibration sources associated with the Project. Reference is made to 'lowest observed adverse effect levels' (LOAEL) and significant observed adverse effect levels' (SOAEL) when describing the magnitude of impact for the various sources. LOAELs and SOAELs are defined based on applicable guidance with reference to the Noise Policy Statement for England (Ref 11) and Planning Practice Guidance for Noise (Ref 12).

Impact Magnitude – Construction Noise

- 10.4.14 Construction noise impacts have been assessed in accordance with BS 5228-1 (Ref 2) and with the guidance of DMRB LA 111 (Ref 5).
- 10.4.15 Construction noise levels have been calculated at the facades of NSR within the Study Area in accordance with the methodology described in Annex F of BS 5228-1.

The predicted construction noise levels at NSR have been compared against the lower noise thresholds (Category A) as detailed in Section E.3.2 of BS 5228-1 (the ‘ABC’ method). The Category ‘A’ construction noise thresholds represent the lowest assessment criteria (typically used to assess impacts in rural areas) and are proposed to be used throughout the Project as a worst-case unless there is a justification for a higher threshold to be set at specific locations.

10.4.16 The LOAEL and SOAEL for construction noise have been established in accordance with **Table 10.3**.

Table 10.3 Construction noise LOAELs and SOAELs at residential receptors

Time Period	LOAEL	SOAEL
Weekdays 7:00am to 7:00pm, and Saturdays 7:00am to 1:00pm	50 dB LAeq,T	65 dB LAeq,T
Weekdays 7:00pm to 11:00pm, Saturdays 1:00pm to 11:00pm, and Sundays 7:00am to 11:00pm	50 dB LAeq,T	55 dB LAeq,T
Night-time 11:00pm to 7:00am	40 dB LAeq,T	45 dB LAeq,T

10.4.17 The magnitude of impact of construction noise has been determined against the criteria specified by DMRB LA 111 as detailed in **Table 10.4**.

Table 10.4 Magnitude of impact from construction noise at residential receptors

Magnitude	Construction Noise Level
Large	Above or equal to SOAEL +5 dB
Medium	Above or equal to SOAEL and below SOAEL +5 dB
Small	Above or equal to LOAEL and below SOAEL
Negligible	Below LOAEL

Impact Magnitude – Construction Traffic Noise

10.4.18 Noise from construction traffic on the public highway has been calculated in accordance with CRTN (Ref 4) and assessed against the criteria detailed in DMRB LA 111 (Ref 5). The BNL from roads within the construction traffic Study Area has been calculated in accordance with CRTN for the ‘do-nothing’ and ‘do-something’ scenarios in the construction year.

10.4.19 The calculated BNL values for the ‘do-minimum’ and ‘do-something’ scenarios in the construction year have been compared to determine the magnitude of the impact in accordance with criteria specified by DMRB LA 111 as detailed in **Table 10.5**.

Table 10.5 Magnitude of impact from construction traffic noise at residential receptors

Magnitude	Increase in BNL of Closest Public Road Used for Construction Traffic (dB)
Large	Greater than or equal to 5.0
Medium	Greater than or equal to 3.0 and less than 5.0
Small	Greater than or equal to 1.0 and less than 3.0
Negligible	Less than 1.0

Impact Magnitude – Construction Vibration on Human Receptors

- 10.4.20 Construction vibration levels have been calculated and assessed in accordance with the methodologies described in BS 5228-2 (Ref 3). Construction vibration effect threshold levels, including applicable LOAEL and SOAEL, are presented in **Table 10.6**.

Table 10.6 Construction vibration effect levels at residential receptors

Vibration Level mm/s Peak Particle Velocity (PPV)*	Effect
0.14	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3	Vibration might be just perceptible in residential environments (LOAEL).
1.0	It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents (SOAEL).
10	Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments

* Peak Particle Velocity

- 10.4.21 The magnitude of impact of construction vibration has been determined against the criteria specified by DMRB LA 111 (Ref 5), as detailed in **Table 10.7**.

Table 10.7 Magnitude of impact of construction vibration at residential receptors

Magnitude	Construction Vibration Level
Large	Above or equal to 10 mm/s PPV
Medium	Above or equal to SOAEL and below 10 mm/s PPV
Small	Above or equal to LOAEL and below SOAEL
Negligible	Below LOAEL

Impact Magnitude – Construction Vibration on Structures

- 10.4.22 As above, construction vibration levels have been calculated and assessed in accordance with the methodologies described in BS 5228-2 (Ref 3).
- 10.4.23 In the case of potential structural damage an impact magnitude scale is not deemed appropriate. As such a fixed threshold has been used.
- 10.4.24 BS 5228-2 notes that the probability of damage tends towards zero at 12.5 mm/s PPV. Buildings and structures where the predicted vibration level is above or approaching this value will be highlighted such that measures can be put in place by the contractor to reduce and manage vibration levels. The specific threshold may be reviewed for specific structures as deemed appropriate.

Impact Magnitude – Operational Substations

- 10.4.25 The assessment of operational noise follows the methodology stated in BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' (BS 4142) (Ref 6).
- 10.4.26 Noise limits have been determined based on background sound level surveys at locations representative of nearby NSR. Sound level surveys have been conducted in accordance with the requirements of BS 4142 and in general accordance with the methodology detailed in BS 7445-1:2003 'Description and measurement of environmental noise. Guide to quantities and procedures' (Ref 7).
- 10.4.27 BS 4142 assesses the potential significance of effects by comparing the 'rating sound level' of an industrial source against the representative 'background sound level' at the location of identified NSR. The sound rating level is a combination of the predicted specific sound level at the NSR and any applicable penalties that may be required for acoustic character, such as tonality or impulsivity.
- 10.4.28 The specific sound levels at each identified NSR have been predicted using a computational noise model following the calculation methodology set out in ISO 9613 (Ref 9) and all available substation design information.
- 10.4.29 The predicted sound rating levels have been compared against the relevant noise limits determined from the baseline sound level survey data. The lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact, depending on context. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.
- 10.4.30 When considering context, BS 4142 references BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' (BS 8233) (Ref 8) as providing context where background and rating noise levels are low. BS 8233 provides recommended noise levels for a variety of situations and locations, including in habitable spaces such as living rooms and bedrooms, and external amenity areas. Guidance has also been sought from the Association of Noise Consultants BS 4142:2014+A1:2019 Technical Note (ANC Guidance) (Ref 10), as appropriate.
- 10.4.31 It is anticipated that further detailed assessment of operational noise from the proposed substations, once the designs have been finalised, detailing specific mitigation measures would be secured via a requirement of the consent, if granted.
- 10.4.32 It is standard practice to set the limit for operational noise such that the sound rating level does not exceed the background sound level, such that the impact is negligible

(or 'low', as defined by BS 4142), depending on context. The magnitude impacts for operational noise are detailed in **Table 10.8**.

Table 10.8 Magnitude of impact from operational substation noise

Magnitude	Comparison of sound rating level and background sound level
Large	Rating level > 10dB above the background sound level
Medium	Rating level between 5 and 9 dB above background sound level
Small	Rating level between 0 and 4 dB above background sound level
Negligible	Rating level below background sound level

Significance of Effects

- 10.4.33 The significance of effect at residential and non-residential NSR has been expressed as a result of the sensitivity of the NSR and magnitude of impact on receptors, experienced as a result of the Project. The significance has been expressed as major, moderate, minor, negligible, or neutral and either adverse or beneficial.

Significance of Construction Effects on Residential Receptors

- 10.4.34 Noise from construction activities, construction traffic noise, and construction vibration would constitute a significant adverse effect at residential NSR where it is determined that a large or medium magnitude of impact would occur for a duration exceeding:
- i. 10 or more days or nights in any 15 consecutive days or nights; and/or
 - ii. a total number of days or nights exceeding 40 in any six consecutive months.

Significance of Operational Effects on Residential Receptors

- 10.4.35 Operational noise impacts will constitute a significant adverse effect where it is determined that a large or medium magnitude of impact occur at residential NSR.

Significance of Effects on Non-Residential Receptors

- 10.4.36 With regards to non-residential receptors, the significance of effect has been determined via the matrix shown in **Table 10.9**, taking account of the sensitivity of the NSR and the impact magnitude. For construction impacts, the duration of impact has also been considered, as above, depending on the receptor type.

Table 10.9 Significance matrix at non-residential NSR

Magnitude	NSR sensitivity			
	High	Medium	Low	Negligible
Large	Major	Major	Moderate	Minor
Medium	Moderate	Moderate	Minor	Negligible
Small	Moderate	Minor	Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

- 10.4.37 Major and moderate effects are typically considered to be significant, whilst minor and negligible effects are not considered to be significant. However, professional judgement would also be applied in reaching conclusions as to the significance of effects at specific non-residential NSR.

10.5 Assumptions and Limitations

- 10.5.1 The following general assumptions and limitations are applicable to the preliminary Noise and Vibration assessment for all Sections of the Project. Any assumptions and limitations which are applicable to Section 5 of the Project are presented within **Supplementary PEI Report Volume 2 Part B Chapter 10 Noise and Vibration**.
- i. The construction Noise and Vibration assessment is based on assumed proposed construction activities and associated indicative plant Noise and Vibration data. Further detailed assessments will be conducted by the contractor prior to commencing works, based on their specific construction methodologies, to inform their specific mitigation proposals.
 - ii. The assessment of construction traffic noise is based on information provided within the Traffic and Transport assessment presented in **Supplementary PEI Report Volume 2 Part B Chapter 9 Traffic and Movement** and the June 2025 PEI Report. Construction traffic forecasts which have been used to the preliminary assessment of construction traffic noise effects are based on an initial high-level estimate of construction materials and programme for the developing design as of Q4 2024. These are considered to provide a reasonable scenario for assessment. The assessment outcomes reported within the Supplementary PEI and the June 2025 PEI Report may therefore change following further assessment of refined traffic projections.
 - iii. The operational substation noise assessment is based on National Grid Electricity Transmission plc (National Grid) specification data from proposed plant items (e.g. transformers). In practice, noise levels from proposed plant would be expected to be no higher than the specification noise levels during normal operation. For the purposes of the assessment, it is assumed that substation transformers are housed within acoustic enclosures providing a reduction of 20 decibels (dB).
- 10.5.2 These key parameters and assumptions will be reviewed based on the design presented in the Development Consent Order (DCO) application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.

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11. Socio- economics, Recreation and Tourism

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11. Socio-economics, Recreation and Tourism

11.1 Overview

- 11.1.1 This appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Socio-economics, recreation and tourism assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.

11.2 Guidance Specific to Socio-economics, Recreation and Tourism Assessment

- 11.2.1 There is limited technical guidance available for Socio-economics, recreation and tourism assessments. However, the assessment of employment effects has followed the approach set out in the Homes and Communities Agency (HCA) Additionality Guide (Ref 2), which provides guidance on assessing the additional impact (or 'additionality') of local economic interventions, taking into account the potential for leakage, displacement and supply chain effects¹. The HCA approach represents standard industry guidance on the assessment of additionality, and for example this guidance has recently been applied to the assessment of direct, indirect and induced effects on employment and Gross Value Added (GVA)² for the Development Consent Order (DCO) application by Luton Rising for London Luton Airport Expansion.
- 11.2.2 In addition, whilst not directly relevant, elements of this assessment have considered guidance on options appraisal and receptor assessment, including Design Manual for Roads and Bridges (DMRB) LA 112 Population and Human Health (Ref 3). For example, in determining significance criteria, the assessment presented has referred to DMRB LA 112, which provides a universally accepted approach for similar linear infrastructure assessments of this nature.

11.3 Data Sources

- 11.3.1 A desk-based baseline assessment has been undertaken using a range of sources to provide a description of the socio-economic conditions within the Study Area (as described in section 11.4). This has been done using established statistical sources,

¹ Leakage refers to the proportion of outputs that benefit those outside of an intervention's target area, displacement refers to the proportion of outputs accounted for by reduced outputs elsewhere in the target area and substitution refers to the effect which arises from where a firm substitutes one activity for a similar one (i.e. such as recruiting a jobless person while another employee loses a job) to take advantage of public sector assistance.

² GVA is a measure of economic productivity that quantifies how much a corporate subsidiary, company, or municipality contributes to the overall economy, a specific producer, sector or region.

and in consultation with stakeholders, where relevant. Relevant policy has been reviewed at the local, regional and national levels to identify the key issues of relevance to the Project.

- 11.3.2 Community facilities, open space, business and tourism receptors have been identified using web mapping of Ordnance Survey (OS) data, cross-checked against internet searches, and taking into account stakeholder feedback. The baseline for promoted/recreational routes is also drawn on OS data, as well as information from the relevant local planning authorities, maps of Sustrans National Cycle Network routes (Ref 4), and the baseline collected by **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 9 Traffic and Movement**.
- 11.3.3 A summary of baseline socio-economic conditions has been collated and presented based upon review of the following datasets:
- i. Traffic count data from surveys, which include pedestrians, cyclists and equestrians;
 - ii. Designated non-motorised user (NMTU) routes and PRoWs from Sustrans and Local Authority Definitive Maps where applicable as listed within **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 11 Socio-economics, Recreation and Tourism**;
 - iii. Office for National Statistics (ONS), Census 2021 (Ref 5);
 - iv. ONS (2024) Mid-year population estimates (Ref 6);
 - v. Ministry of Housing, Community and Local Government (now Department for Levelling Up, Housing and Communities), (2019), English Indices of Deprivation (Ref 7);
 - vi. ONS (2023), Regional Gross Value Added (balanced) per head and income components (Ref 8);
 - vii. ONS (2022), UK Business Register and Employment Survey (Ref 9);
 - viii. ONS (2018) Population projections (Ref 10);
 - ix. Ordnance Survey (OS) Open Greenspace (Ref 11);
 - x. OS Local Important Buildings (Ref 12);
 - xi. OS AddressBase (Ref 13);
 - xii. Visit Britain (2023), Great Britain Tourism Survey (Ref 14); and
 - xiii. DMRB LA 112 Population and Human Health (Ref 3).
- 11.3.4 Data gathering for the baseline is ongoing and any additional datasets made available by the relevant Local Planning Authorities (LPAs) or other third-party stakeholders such as the tourism boards will be considered at ES stage. This will complement existing information (for example the OS Local Important Buildings dataset has been used to identify community receptors such as schools, religious buildings, and sport and leisure facilities in the Study Area (as described in section 11.4)). Additional information could, for example, include data from tourism economic impact assessments commissioned by the LPAs.
- 11.3.5 In addition, the baseline for private assets is based on desk-based research to identify locations of residential properties, businesses, community and recreational facilities

and development land (including solar farm and onshore wind farms as above ground renewable energy, and land allocations). Publicly available information on planning permissions relative to the Project has also been gathered using data available from the relevant LPAs. This is set and mapped out in the Supplementary PEI Report and will be reviewed and updated in the ES.

- 11.3.6 The baseline for development land allocations has been provided in the Supplementary PEI Report and will be reviewed and updated in the ES. Development land allocations have been identified based on the adopted Local Plans for each LPA within the Study Area (as described in section 11.4), and, where relevant, any emerging or replacement Local Plans (whilst acknowledging their status). Development land allocation polygons have been mapped in GIS and cross-referenced with the Study Area to understand the potential interface of any strategic site allocations with the Project.
- 11.3.7 Further information, including individual community receptors and local businesses that may experience effects as a result of the construction of the Project have been provided in the baseline for the Supplementary PEI Report and will be reviewed and updated in the ES.

11.4 Approach to Socio-economics, Recreation and Tourism Assessment

Scope of the Assessment

- 11.4.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 15) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 16). The scope is also informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Socio-economics, recreation and tourism chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 11.4.2 Non statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 17). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 11.4.3 As noted above, there is limited technical guidance available for Socio-economics, recreation and tourism assessments. As such, the methodology for assessing impacts will follow the approach as required in the EIA Regulations 2017 (Ref 18), and will entail:
- i. assessment of the likely scale, permanence and significance of effects associated with Socio-economics, recreation and tourism receptors; and
 - ii. an assessment of the potential cumulative impacts with other projects within the surrounding area.
- 11.4.4 As proposed in the Scoping Report (Ref 16) and agreed via the Scoping Opinion (Ref 15), **Table 11.1** identifies receptors and stages of the Project which are scoped in to the EIA.

- 11.4.5 It is noted that agreement to scope out indirect impacts on communities, community facilities, visitor attractions and businesses and direct or indirect impacts on residential property, access and impact on amenity are subject to confirmation that significant effects are not experienced by these receptors during the construction, operation or maintenance phases of the Project. This will be confirmed in the EIA.

Table 11.1 Agreed scope of the assessment

Receptor	Potential for significant effect	Project phase
Local labour market (including economy and employment, supply chain effects, training and apprenticeship opportunities, as well as any impact on tourism bedspace from the construction workforce)	<p>Construction of the Project will create employment, training and apprenticeship opportunities. However, the scale of operational and maintenance employment generated by the Project is likely to be very limited.</p> <p>Due to the potential scale of employment generated by the Project during construction, and the potential cumulative impact of National Grid Electricity Transmission plc (National Grid) projects in the region, potential impacts on tourism bedspace availability have been scoped in during the construction phase. It is anticipated that tourism accommodation availability will be unaffected during operation and maintenance due to the small scale of employment generated during these phases of the Project.</p>	Construction
Affected communities (local communities, including populations of towns and villages)	The Project has been designed to avoid direct effects on these receptors as far as possible. However, there is the potential for indirect temporary effects to arise from construction activities that may give rise to significant effects, so this has been scoped in for further consideration at this stage.	Construction
Strategic visitor attractions	The Project has been designed to avoid direct effects on these receptors as far as possible. However, there is the potential for indirect temporary effects to arise from construction activities that may give rise to significant effects, so this has been scoped in for further consideration at this stage. It is assumed that access would be maintained at all times, where it cannot, it will be reinstated post construction so that their ongoing use will be unaffected during operation and maintenance activities.	Construction
Local businesses	The Project has been designed to avoid direct effects on these receptors as far as possible. However, there is the potential for indirect temporary effects to arise from construction	Construction

Receptor	Potential for significant effect	Project phase
	activities that may give rise to significant effects, so this has been scoped in for further consideration at this stage. Access to these receptors will be maintained during construction where possible and, where it cannot, it will be reinstated post construction so that their ongoing use will be unaffected during operation and maintenance activities.	
Community facilities	The Project has been designed to avoid direct effects on these receptors as far as possible. However, there is the potential for indirect temporary effects to arise from construction activities that may give rise to significant effects, so this has been scoped in for further consideration at this stage. Access to these receptors will be maintained during construction where possible and, where it cannot, it will be reinstated post construction so that their ongoing use will be unaffected during operation and maintenance activities.	Construction
Development land (land allocations and above ground renewable energy infrastructure, including solar farms and onshore wind farms)	The Project has been designed to avoid allocated development land and above ground renewable energy generation (solar farms and onshore wind farms) wherever possible. However, there may be the potential for temporary or permanent land take across these receptors. Any temporary or permanent effects on land allocated for development by local plans would arise during the construction period and would therefore be assessed as construction effects only. The status of the development land is also considered in the assessment, in determining the sensitivity and magnitude of change. Disruption during operation and maintenance will be avoided as far as possible. An assessment of the direct effects of the Project on above ground renewable energy generation infrastructure (solar and onshore wind farms) as socio-economic receptors will be presented in the ES.	Construction
Users of promoted/recreational routes and PRow of significance in the local area	The baseline has identified a number of routes within the Study Area (as described in section 11.4) that are likely to be temporarily or permanently managed or diverted during construction. Disruption during the operation and maintenance periods will be avoided as far as possible and managed through a PRow Management Plan. Any temporary or permanent,	Construction

Receptor	Potential for significant effect	Project phase
	(including in-combination) effects on promoted/recreational routes would arise during the construction period and would therefore be assessed as construction effects.	
Open space	The Project has been designed to avoid direct effects on these receptors as far as possible. Any temporary or permanent effects on open space would arise during the construction period and would therefore be assessed as construction effects. Disruption during operation and maintenance will be avoided as far as possible.	Construction
Aviation	There is the potential for effects upon Aviation receptors as a result of the Project. An Aviation Report will be prepared for the submission of the DCO and the findings of this will be incorporated into the assessment at ES stage.	Construction and operation

Study Area

- 11.4.6 The Study Area for the assessment of Socio-economics, recreation and tourism effects varies depending on the likely spatial extent of the effect under consideration. For example, effects on population and the economy would be experienced at a regional or sub-regional level. This approach is typical, reflects best practice for socio-economic assessments of this nature and aligns with the approach suggested in DRMB LA 112 Population and Human Health (Ref 3). This approach also takes into account the assessment methodologies for other relevant environmental topics where indirect amenity effects need to be considered in-combination.
- 11.4.7 **Table 11.2** sets out the Study Areas considered for each receptor type that are taken into account within the assessment.

Table 11.2 Study Areas

Receptor type	Study Area for direct effects	Study Area for indirect effects
Affected communities (local communities, including populations of towns and villages)	Receptors located within the draft Order Limits and the Refined Weston Marsh Substation Siting Zone (hereafter referred to as the Refined Siting Zone)	Receptors located within a regional and sub-regional level
Labour market	Receptors located within a regional and sub-regional level	Receptors located within a regional and sub-regional level

Receptor type	Study Area for direct effects	Study Area for indirect effects
Strategic visitor attractions	Receptors located within the draft Order Limits and Refined Siting Zone	Receptors located within 5 km of the draft Order Limits and Refined Siting Zone
Local businesses	Receptors located within the draft Order Limits and Refined Siting Zone	Receptors located within 500 m of the draft Order Limits and Refined Siting Zone
Community facilities	Receptors located within the draft Order Limits and Refined Siting Zone	Receptors located within 500 m of the draft Order Limits and Refined Siting Zone
Development land (land allocations and above ground renewable energy infrastructure, including solar farms and onshore wind farms)	Receptors located within the draft Order Limits and Refined Siting Zone	Receptors located within 500 m of the draft Order Limits and Refined Siting Zone
Users of promoted/recreational routes and PRow of significance in the local area	Receptors located within the draft Order Limits and Refined Siting Zone	Receptors located within 500 m of the draft Order Limits and Refined Siting Zone
Open space	Receptors located within the draft Order Limits and Refined Siting Zone	Receptors located within 500 m of the draft Order Limits and Refined Siting Zone
Aviation	Receptors located within 5 km of the proposed overhead line proposed alignment and Refined Siting Zone	Receptors located within 5 km of the proposed overhead line proposed alignment and Refined Siting Zone

- 11.4.8 The Study Area for aviation receptors is 5 km from the proposed overhead line infrastructure, as opposed to the draft Order Limits and Refined Siting Zone in their entirety. This is because of the nature of this specific receptor group, and the subsequent elements of the Project that has the potential to cause adverse or beneficial effects being limited to the placement of overhead line infrastructure only.
- 11.4.9 Appropriate qualitative and quantitative sensitivity and magnitude criteria have therefore been defined, based on expert judgment and understanding of local and regional priorities, to assess the scale and nature of the impacts of the Project against baseline conditions. These are set out above.

Assessment Methodology

Aviation

- 11.4.10 For the purposes of this Supplementary PEI Report, the locations of airfields have been identified as part of the baseline conditions. An assessment of the effects of the Project on airfields as a socio-economic receptor will be presented in the ES.
- 11.4.11 As detailed in the **Supplementary Design Development Report for Section 5**, a specialist aviation consultant has been engaged to support ongoing discussions relating to the assessment of operational safety of airfields in the vicinity of the Project. The findings of the operational safety assessment have been used to inform routing and siting decisions as part of the development of the Project. Further engagement will be undertaken with airfield owners and operators as the Project progresses. The findings of the operational safety assessments will be used to inform the socio-economic assessment at ES stage only.

Sensitivity

- 11.4.12 **Table 11.3** sets out the sensitivity criteria that will be used in the assessment.

Table 11.3 Sensitivity of receptors

Level of Sensitivity	Description
Very high	Businesses, individuals, groups of individuals, or other receptors possessing very significant economic, social and/or community value. These receptors are considered very likely to incur a material loss or gain as a result of potential changes in the environment, with little to no potential for substitution.
High	Businesses, individuals, groups of individuals, or other receptors possessing some significant economic, social and/or community value. These receptors are considered likely to incur some material loss or gain as a result of potential changes in the environment, with limited potential for substitution.
Medium	Businesses, individuals, groups of individuals, or other receptors possessing some economic, social and/or community value. These receptors are considered likely to incur a material loss or gain as a result of potential changes in the environment, with potential for substitution.
Low	Businesses, individuals, groups of individuals, or other receptors possessing some economic, social and/or community value. These receptors are not considered likely to incur any loss or gain as a result of potential changes in the environment.
Negligible	Businesses, individuals, groups of individuals, or other receptors possessing limited economic, social and/or community value. These receptors are not considered likely to incur any loss or gain as a result of potential changes in the environment.

Magnitude

11.4.13 **Table 11.4** sets out the magnitude criteria that will be used in the assessment.

Table 11.4 Magnitude of impact

Level of Magnitude	Description
Large	An impact that would be likely to result in total loss of an individual receptor or permanent changes to baseline conditions for a large number of businesses, individuals or groups of individuals.
Medium	An impact that would be very likely to result in partial loss or changes to baseline conditions for a moderate number of businesses, individuals or groups of individuals.
Small	An impact that would be likely to result in minor changes to baseline conditions for a small number of businesses, individuals or groups of individuals.
Negligible	An impact that would be likely to result in little or no change to baseline conditions for businesses, individuals or groups of individuals.

11.4.14 For example, a large magnitude of impact could be as a result of a direct acquisition and demolition of a building or severance of access with no alternative provided. A medium magnitude of impact could be as a result of partial removal or change to access which would compromise a business' or facilities' viability, or severance with limited alternative provision. A small magnitude of impact could be as a result of changes to the baseline which do not have an impact on the viability of a local business or community facility, and where access is impacted but with appropriate provisions provided.

Significance of Effects

11.4.15 Those effects which are found to be moderate or major are considered to be 'significant' and those which are minor or negligible are 'not significant'. Duration of impact will also be considered, with more weight given to reversible long-term or permanent changes than to short-term, temporary ones. Temporary effects are typically considered to be those associated with the construction and maintenance works, whereas long-term reversible effects/permanent effects are generally those associated with the operational stage (notwithstanding in some cases there may be exceptions, such as permanent PROW diversions during construction). **Table 11.5** sets out the sensitivity criteria that will be used in the assessment.

Table 11.5 Determination of significance matrix

Impact Magnitude	Value/Sensitivity of receptor				
	Very high	High	Medium	Low	Negligible
Large	Major	Major/ moderate	Major/ moderate/ minor	Moderate/ minor	Minor/ negligible
Medium	Major/ moderate	Major/ moderate	Moderate/ minor	Minor/ negligible	Negligible
Small	Major/ moderate/ minor	Moderate/ minor	Moderate/ minor	Minor/ negligible	Negligible
Negligible	Minor/ negligible	Minor/ negligible	Minor/ negligible	Negligible	Negligible

11.5 Assumptions and Limitations

11.5.1 The following limitations and assumptions have been identified for the assessment:

- i. These key parameters and assumptions will be reviewed based on the design presented in the DCO application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.
- ii. For Socioeconomics, recreation and tourism assessments, there is no accepted definition of what constitutes a significant (or not significant) effect. It is however recognised that effects are categorised based upon the relationship between the scale (or magnitude) of impact and the sensitivity (or value) of the affected resource or receptor, as identified in the EIA Regulations 2017 (Ref 18). This approach is applied to the assessment.
- iii. This Supplementary PEI Report has been collated based on a range of publicly available data and information, together with information provided by stakeholders or gathered through survey data. It is assumed that the data collated is accurate. The baseline will be supplemented with additional data collected as part of the EIA process. A precautionary approach has been taken and professional judgement, based on experience of similar linear projects, has been used where required to inform the scope of the assessment.
- iv. The commercial agreement for land, including productive land, between the applicant and landowners is beyond the scope of this assessment and the subsequent ES. This chapter does not consider the financial effects on individual businesses, as this may be the subject of the landowner negotiations and may result in compensation payments to offset effects on landowners and businesses. In addition, the Socio-economics, recreation and tourism assessment does not consider the effects of the Project on property values as this is not a matter for assessment under the EIA Regulations 2017 (Ref 18). As a result, and as agreed via the Scoping Opinion (Ref 15) this is scoped out of the ES. Also, it should be noted that potential impacts on agricultural land holdings

has been assessed within **Supplementary PEI Report Volume 2 Part B Section 5 Chapter 8 Agriculture and Soils**.

- v. Information on open greenspace has been drawn from desk-based research using OS data and checked against Google Maps. This may not capture the most comprehensive or up to date information, and therefore, the list of baseline open greenspaces should be viewed as indicative rather than a comprehensive assessment at this stage of the project. A more detailed baseline will be provided as part of the ES, drawing on information provided through consultation and stakeholder engagement.
- vi. A proportion of the construction and maintenance workers are likely to live locally to the site, while a proportion will travel to the site to work. More detail on the average and peak number of workers expected to work across the construction and maintenance period, and the proportion of workers who will be expected to live locally to the site, will likely become available as the Project progresses and will be set out in the ES, also taking into account other developments taking place or planned locally. This will inform the assessment of construction employment effects.
- vii. Some Socio-economics, recreation and tourism receptors are potentially subject to multiple sources of effect (which are therefore assessed within multiple topic areas) and as such intra-project cumulative effects may potentially occur. For example, combined impacts across topics may affect the amenity value of Socio-economics, recreation and tourism receptors. **Supplementary PEI Report Volume 2 Part C Chapter 9 Cumulative Effects** identifies the potential linkages and interrelations between topics. However, as the Supplementary PEI Report is presenting a preliminary assessment (and the level of significance for identified effects within some topic assessments are not defined), an assessment of intra-project cumulative effects has not been presented within the Supplementary PEI Report but will be presented in the ES.
- viii. For the purposes of this Supplementary PEI Report and the previously published June 2025 PEI Report, it has been assumed that following the implementation of all Design, Control and Mitigation Measures there is unlikely to be a significant intra-project cumulative effect upon the amenity value of any Socio-economics, recreation and tourism receptors. This will be reviewed and updated accordingly at ES stage.

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12. Air Quality

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12. Air Quality

12.1 Overview

- 12.1.1 This Appendix of the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Air Quality assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.

12.2 Guidance Specific to Air Quality Assessment

- 12.2.1 Relevant guidance that has informed the Supplementary PEI Report are listed below. These will also be taken into account as part of the assessment reported within the ES:
- i. Institute of Air Quality Management (IAQM) (2024) Guidance on the Assessment of Dust from Demolition and Construction v2.2 (Ref 2);
 - ii. Environmental Protection UK (EPUK)/IAQM (2017) Land Use Planning and Development Control: Planning for Air Quality v1.2 (Ref 3);
 - iii. IAQM (2020) A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites v1.1 (Ref 4);
 - iv. Department for Environment, Food and Rural Affairs (Defra) and the Devolved Administrations (2022) Local Air Quality Management Technical Guidance (TG22) (Ref 5); and
 - v. Air Quality Strategy: Framework for Local Authority Delivery (2023) (Ref 6).

12.3 Data Sources

- 12.3.1 The following data has been used to inform the Air Quality assessment:
- i. Defra's Background Maps (based on a 2021-base year) (Ref 7);
 - ii. Air Pollution Information System (APIS) (Ref 8);
 - iii. Defra's Air Quality Management Area (AQMA) dataset (Ref 9);
 - iv. Defra's Multi-Agency Geographic Information for the Countryside (MAGIC) (Ref 10);
 - v. Local authority Air Quality Management Reports;
 - vi. Ordnance Survey (OS) AddressBase Plus dataset;
 - vii. Google Earth Imagery; and

viii. Data on Part A1¹ Permitted Installations held by the Environment Agency and Part A2 and B² Installations held by the local authorities within the baseline Study Area (Ref 11).

- 12.3.2 Preliminary projections of changes in traffic flow as a result of the Project have been used to complete an initial screening exercise as outlined below. Further detail regarding traffic data is provided within **Supplementary PEI Report Volume 2 Part B Chapter 9 Traffic and Movement** and supporting appendices.

12.4 Approach to Air Quality Assessment

Scope of the Assessment

- 12.4.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 12) provided by the Planning Inspectorate in September 2024 on behalf of the Secretary of State, following the submission of the Environment Impact Assessment (EIA) Scoping Report (Ref 13). A summary of the Scoping Opinion together with a response against each point of relevance to the Air Quality chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 12.4.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 14). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 12.4.3 The Supplementary PEI Report focuses on the possible impacts due to the Project and the likelihood for significant effects on local air quality in the construction and operation and maintenance phases.
- 12.4.4 The scope of the assessment considers the impact of:
- Dust from on-site construction activities (including enabling works) and off-site trackout by construction vehicles on sensitive (human and ecological) receptors. The main potential impacts are dust soiling (which can lead to the loss of amenity) and the deterioration of human health (as a result of increases in concentrations of Particulate Matter (PM₁₀ and PM_{2.5})).
 - Vehicular tail-pipe emissions containing air pollutants released by construction, operation and maintenance vehicles associated with the Project using the local road network. The emissions from vehicles include but are not limited to Nitrogen Oxides (NO_x) (comprising Nitrogen Monoxide, NO, and Nitrogen Dioxide, NO₂), Ammonia (NH₃) and Particulate Matter (PM₁₀ and PM_{2.5}). Emissions from vehicles also include those associated with brake and tyre wear.
- 12.4.5 As per the EIA Scoping Report, the assessment of construction phase dust (including particulate matter, PM₁₀ and PM_{2.5}) has been scoped in.
- 12.4.6 Planning Inspectorate (PINS) have stated that they are unable to scope out emissions from Non-Road Mobile Machinery (NRMM) at this stage due to the limited

¹ Large-scale industrial processes emitting to land, air and/or water.

² This would relate to smaller industrial processes regulated by the Local Authority under the Pollution Prevention and Control guidance, including Part A2 processes (which may release to land, air and water) or Part B processes (which only release to air).

amount of information available. At the time of writing the Supplementary PEI Report and the June 2025 PEI Report, there was limited information available on the number and type of plant and NRMM that will be used during the construction and operation and maintenance phases. The projected number, type and location of plant and NRMM will be included in the ES and screened against current guidance (Ref 2 and Ref 5) to determine the need for detailed assessment. Where screening indicates that there is potential for significant effects, these will be assessed in further detail and the findings reported in the ES.

- 12.4.7 Information on the duration and change in traffic flows associated with planned diversions, as well as the proposed routes, are yet to be determined. PINS have also stated that vehicle emissions associated with diverted traffic can be scoped out of the ES, provided it can be demonstrated that the predicted volumes of diverted traffic would not exceed the relevant indicative criteria for air quality assessment set out in the current guidance (Ref 2 and Ref 5), this will be confirmed at the ES stage. Detailed quantitative modelling will be undertaken where the relevant criteria are exceeded.
- 12.4.8 Comments received from PINS have also been addressed throughout the chapter and are outlined in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.

Study Area

Construction Dust

- 12.4.9 For construction phase dust impacts, the Study Area has been defined by the screening criteria from the IAQM Construction Dust Guidance and additional guidance given by Natural England during the scoping opinion (Ref 12). The construction dust Study Area is shown within **Supplementary PEI Report Volume 2 Part B Figure 12.1 Construction Dust Study Area** and is dictated by the screening criteria below:
- i. Human receptors within the draft Order Limits plus those within the surrounding area extending 250 m from the draft Order Limits, or within 50 m of the proposed routes used by construction traffic on the public highway or up to 250 m from a site entrance.
 - ii. Ecological designated sites within the draft Order Limits plus those within the surrounding area extending 200 m from the draft Order Limits, or within 50 m of the proposed routes used by construction traffic on the public highway or up to 250 m from a site entrance. The 200 m screening distance from the draft Order Limits is more conservative than that stipulated in the IAQM guidance (Ref 2), and has been used following the guidance given by Natural England during the Scoping Opinion (Ref 12).
- 12.4.10 Background NO_x, NO₂, PM₁₀ and PM_{2.5} concentrations presented in the baseline assessment for the existing and future years presented in the Supplementary PEI Report and the June 2025 PEI Report have been extracted from Defra's background maps³ (Ref 7) for the area extending 500 m from the draft Order Limits.

³ Defra background maps of modelled air pollutant concentrations are provided on a 1 km x 1 km basis for the whole of the UK. To capture the grid squares that fall within the draft Order Limits and those immediately adjacent, a 500 m buffer has been applied.

- 12.4.11 Where ecological receptors have been identified within 200 m of the draft Order Limits, baseline data for pollutants which affect nutrient nitrogen deposition, such as ammonia (NH₃) concentrations and nitrogen deposition rates, have been taken from APIS (Ref 8). APIS is also the source for acid deposition rates and the relevant critical levels and loads for the designated sites. Future levels will be predicted at the ES stage using future nitrogen growth projections developed by the Joint Nature Conservation Committee (Ref 15).

Road Traffic Emissions

- 12.4.12 Construction traffic routes and estimates of vehicle flows in terms of numbers of Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs) have been provided for the current year of 2024 and 2031, which is anticipated to be the busiest period for vehicle movements. The methodology followed for predicting construction traffic flows is given in **Supplementary PEI Report Volume 2 Part B Chapter 9 Traffic and Movement**.
- 12.4.13 The Study Area for the assessment of impacts upon human receptors due to road traffic emissions associated with the Project, has been defined with reference to the criteria given in the EPUK/IAQM guidance (Ref 2). This Study Area comprises any roads where these criteria are exceeded, and there any human receptors within 200 m of these roads. The Study Area described within this chapter will be updated as required for the ES, based upon further analysis of traffic projections for the Project.
- 12.4.14 The Study Area for the assessment of impacts upon ecological receptors due to road traffic emissions associated with the Project, includes ecological sensitive receptors within 200 m of any road links where the projected changes in traffic flow exceed IAQM guidance thresholds (Ref 4).
- 12.4.15 Roadside NO₂ concentrations from local authority monitoring sites within 200 m of the routes within the Study area that are expected to be used by construction and operation and maintenance traffic have been used to determine baseline conditions along routes that may be used by traffic accessing the Project. Where monitoring data was limited or unavailable, in particular for PM₁₀ and PM_{2.5}, modelled estimates taken from Defra's background maps (Ref 7) have been used to infer levels.
- 12.4.16 The study areas and baseline data will be reviewed and updated as part of the ES to reflect the latest Project design data.

Assessment Methodology

Construction Dust Assessment

- 12.4.17 The assessment of construction impacts have been undertaken in line with IAQM dust guidance (Ref 2). This guidance provides a risk-based approach to the assessment of the potential for dust impacts from four types of activities taking account of the sensitivity of the environment surrounding the works: demolition; earthworks; construction; and track-out (the movement of dust/mud off-site on construction vehicles).
- 12.4.18 Construction dust impacts have been assessed for each specific Section of the Project. This has produced a specific dust emission risk per Section of the Project and allowed for the application of location-specific mitigation.

Sensitivity

- 12.4.19 For the assessment of construction phase dust impacts, a receptor is defined as, ‘a location that may be affected by dust emissions during demolition and construction. Human receptors include locations where people spend time and where property may be impacted by dust. Ecological receptors are habitats that might be sensitive to dust’ within the IAQM guidance (Ref 2). For ecological receptors, these include locations where there could be direct impacts on vegetation or aquatic ecosystems due to dust deposition, and the indirect impacts on fauna e.g. on foraging habitats.
- 12.4.20 Receptor sensitivity to dust impacts is defined as either low, medium or high in the IAQM guidance (Ref 2) as outlined in **Table 12.1**.

Table 12.1 Descriptions of levels of receptor sensitivity

Level of receptor sensitivity	Dust soiling effects	Human health	Ecological effects
Low	Locations where the enjoyment of amenity would not reasonably be expected and exposure would be for limited periods e.g. footpaths, shopping streets and car parks.	Locations where human exposure is transient e.g. public footpaths, playing fields parks and shopping streets.	Locally designated ecological sites such as Local Nature Reserves and Local Wildlife Sites (which are equivalent to County Wildlife Sites in England (Ref 16)) with dust sensitive features.
Medium	Locations where users would expect to enjoy a reasonable level of amenity and value could be diminished by dust soiling e.g. parks and places of work.	Locations where the humans exposed are workers and exposure is of a time period relevant to the air quality objective for PM ₁₀ e.g. offices and shops	Nationally designated ecological sites e.g. a Site of Special Scientific Interest (SSSI) with dust sensitive features.
High	Locations where users can expect enjoyment of a high level of amenity or where the appearance, aesthetics or value of property would be diminished by soiling. Consideration of where people or property are expected to be present continuously for extended periods of time e.g. residential properties, museums,	Where human receptors are expected to be present continuously for extended periods of time relevant to the air quality objective for PM ₁₀ e.g. residential properties, hospitals, schools and care homes, (as defined in Box 1-1 of LAQM.TG22 (Ref 5)).	Internationally or nationally designated ecological sites e.g. Special Conservation Areas (SACs), Special Protection Areas (SPAs) designated under the Habitats Directive (92/43/EEC) and Ramsar sites with dust sensitive features. They can also include local sites designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings and locations where there is a community of a

Level of receptor sensitivity	Dust soiling effects	Human health	Ecological effects
	medium- and long-term car parks.		particularly dust sensitive species vascular species included in the Red Data List for Great Britain.

- 12.4.21 The sensitivity of an area to dust soiling effects on people and property takes in to account the receptor sensitivity (given above) and the number of receptors within predefined distances given in IAQM guidance (Ref 2) i.e. 0 – 20 m, 0 – 50 m, 0 – 100 m and 0 – 250 m from the source. Determination of the sensitivity of an area to human health impacts uses a similar approach as dust soiling but requires estimated background PM₁₀ levels taken from Defra’s background maps (Ref 7) to be considered as well. Other factors, such as a history of dust generating activities in the area, local topography, geography, features e.g. the presence of trees that may provide screening, and meteorology also need to be considered when determining receptor sensitivity.

Magnitude

- 12.4.22 The level of magnitude is determined by the scale and nature of works that will be undertaken using the relevant descriptors outlined within IAQM guidance (Ref 2) and are displayed in **Table 12.2**.

Table 12.2 Descriptions of levels of magnitude

Level of magnitude	Description
Small	Demolition volume under 12,000 m ³ less than 6 m above ground level, total site area less than 18,000 m ² , soil type with large grain size, construction material with low potential for dust release, less than 20 Heavy Duty Vehicle (HDV) trips per day, unpaved road length less than 50 m etc.
Medium	Demolition activities 6 m – 12 m above ground level with a total volume of 12,000 m ³ – 75,000 m ³ , moderately dusty soil type, potentially dusty construction material, total site area of 18,000 m ² – 110,000 m ² , 20 to 50 HDV trips per day, unpaved road length 50 – 100 m etc.
Large	On-site crushing and screening demolition, demolition activities greater than 12 m above ground level and 75,000 m ³ , total site area greater than 110,000 m ² , more than 50 heavy earth moving vehicles active at any one-time, on-site concrete batching, sandblasting, more than 50 HDV outward movements per day, unpaved road length greater than 100 m etc.

Risk of Impacts

- 12.4.23 The level of magnitude and the sensitivity of the area are combined to determine the risk of impacts without mitigation applied. **Table 12.3** enables determination of the risk of impacts from demolition and **Table 12.4** enables determination of the risk of

impacts from earthworks, construction and trackout; both tables have been adapted from the IAQM guidance (Ref 2).

Table 12.3 Risk of impacts from demolition activities

Sensitivity of Surrounding Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table 12.4 Risk of impacts from earthworks, construction and trackout activities

Sensitivity of Surrounding Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

- 12.4.24 The risk category identified for each construction activity (demolition, earthworks, construction and trackout) is used to determine the level of mitigation required. For those cases where the risk category is negligible, no mitigation measures beyond those required by legislation will be required.
- 12.4.25 Examples of recommended mitigation measures are given in the IAQM guidance (Ref 1) and are divided into general measures, applicable to all sites, and those applicable specifically to each construction activity. The mitigation measures required are based on whether the risk determined for each activity is high, medium or low. For general mitigation measures, the highest risk category is applied.
- 12.4.26 A single set of construction dust mitigation measures have been derived for the Project as a whole from the assessment findings for each Section of the Project; these are given in **Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice (CoCP)**.

Significance of Effects

- 12.4.27 The IAQM guidance on the assessment of dust from demolition and construction (Ref 1) recommends that no assessment of the significance of effects is made without mitigation in place, as it is assumed that mitigation will be secured by planning conditions, legal requirements or regulations. The main purpose of the dust risk assessment is to ensure that the proposed mitigation is appropriate for the Project.
- 12.4.28 With appropriate mitigation in place, the IAQM guidance indicates that the residual effect of dust emissions associated with the demolition and construction can be classified as being 'not significant'.

Road Traffic Emissions Assessment

- 12.4.29 For the purposes of the Supplementary PEI Report and the June 2025 PEI Report, an initial screening assessment of construction traffic flows has been completed based upon preliminary construction traffic projections. Projected changes in Annual Average Daily Traffic (AADT) flows for both LGVs and HGVs have been screened to determine where detailed assessment (using dispersion modelling) is likely to be required, the findings of which will be reported in the ES submitted with the Development Consent Order (DCO). This screening exercise is intended to provide an indication of where there is greatest potential for changes in air quality as a result of construction traffic, but it is noted that no dispersion modelling has been completed at this stage.
- 12.4.30 The impact of traffic vehicle emissions on sensitive (human and ecological) receptors within 200 m of affected roads will be considered, beyond this distance no significant effects are expected (Ref 17).
- 12.4.31 Where changes in traffic flows resulting from the construction of the Project meet the assessment criteria within the EPUK/IAQM guidance (Ref 3) set out below, then detailed dispersion modelling will be undertaken at ES Stage to determine the impact on existing human sensitive receptors:
- a change in Light Duty Vehicle (LDV)⁴ flows of more than 100 AADT within or adjacent to an (AQMA) or more than 500 AADT elsewhere; and
 - a change in Heavy Duty Vehicles (HDV) (>3.5 tonnes)⁵ flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere.
- 12.4.32 Road links that do not meet the criteria will not be subject to detailed assessment.
- 12.4.33 Operation and maintenance traffic flows have also been screened against the EPUK/IAQM guidance for human receptors (Ref 2) and IAQM guidance for ecological receptors (Ref 4). Any links that exceed the screening criteria will be subject to detailed quantitative modelling at ES stage to determine the impact on sensitive human and ecological receptors.
- 12.4.34 Based on an initial review of the existing road network that may be used by traffic associated with the Project, detailed assessment of impacts on sensitive ecological receptors within 200 m of the affected roads may be required as the predicted change in HDV exceeds the change threshold given in the IAQM guidance of 200 AADT. However once traffic data is available at the ES stage, it will be rescreened against the criteria within the IAQM guidance to confirm that this is the case.
- 12.4.35 Given the absence of dispersion modelling outputs, no detailed assessment of impact magnitude or the significance of likely effects has been undertaken for the purposes of the Supplementary PEI Report and the June 2025 PEI Report with respect to road traffic emissions. These assessments will be completed during development of the ES following supplementary screening of finalised traffic projections. Where detailed quantitative modelling at the ES stage is required, the magnitude of impacts and significance of effects will be assessed in accordance with the methodologies set out within EPUK/IAQM guidance for human receptors (Ref 2)

⁴ Light Duty Vehicles = cars and light goods vehicles (LGVs).

⁵ Heavy Duty Vehicles = Heavy Goods Vehicles (HGVs) plus Public Service Vehicles, e.g., buses and coaches.

and IAQM guidance for ecological receptors (Ref 4). In summary, the key elements of this are set out below.

Sensitivity

- 12.4.36 Relevant sensitive human receptor locations are places where members of the public might be expected to be regularly present over the averaging period of the Air Quality Objectives (AQOs). This includes but is not limited to residential properties, schools, care homes and hospitals.
- 12.4.37 Ecological receptors are considered sensitive if they are classified as a designated site of local, national or international importance. For this assessment, this includes the following types of site, for which the specific sites are described in **Supplementary PEI Report Volume 2 Part B Chapter 12 Air Quality**:
- i. Local Nature Reserve (LNR);
 - ii. Local Wildlife Site (LWS);
 - iii. County Wildlife Site (CWS); and
 - iv. Ancient Woodland (AW).

Magnitude

- 12.4.38 If the screening criteria are met or exceeded, then a calculation of emissions from traffic will be undertaken using the latest available version of the Defra Emissions Factors Toolkit (currently EFT v13.1, available on Defra's website (Ref 18)) in conjunction with construction traffic flow information from the Transport Assessment. This would also consider the need for road closures and diversions where necessary. Dispersion modelling would be undertaken using CERC's Air Dispersion Modelling System-Roads (ADMS-Roads v5.0.1) dispersion modelling program (Ref 19).
- 12.4.39 The conversion of road Nitrogen Oxides (NO_x) to Nitrogen Dioxide (NO₂) will be undertaken using the latest version of the Defra NO_x to NO₂ Calculator (currently v9.1, available on Defra's website (Ref 20)). Also, the road NO_x will be inferred from the roadside measurements of NO₂ using the Defra NO_x to NO₂ calculator.
- 12.4.40 Calculation of emissions from traffic presented in the ES will be undertaken with the most recently available local air quality management tools and background air quality concentrations (2021 background mapping) from Defra (Ref 7). These are periodically updated, and this may occur during the course of the Project. Where this occurs, the same tools and data will be used throughout the ES stage to maintain continuity, where appropriate, throughout the Project.
- 12.4.41 The magnitude of change will be assessed by comparing the predicted concentration in the 'Do Something', scenario i.e., with the contribution from the Project traffic flows to the 'Do Minimum' scenario, i.e., without the contribution from Project traffic flows.
- 12.4.42 For human receptors, the magnitude of impacts will be assessed by comparing the percentage change of modelled concentrations in the 'Do Minimum' and 'Do Something' scenarios at identified receptors relevant to the AQOs as shown in **Table 12.5** and established in the EPUK/IAQM guidance (Ref 4).

Table 12.5 EPUK/IAQM impact descriptors for individual receptors

Long-term average concentration at receptor in assessment year	Per cent change in concentration relative to Air Quality Assessment Level (AQAL)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76 – 94% of AQAL	Negligible	Slight	Moderate	Moderate
95 – 102% of AQAL	Slight	Moderate	Moderate	Substantial
103 -109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

Significance

- 12.4.43 The level of significance is evaluated by assessing the magnitude of change in pollutant concentrations between the Do Minimum and Do Something scenarios combined with the background concentrations. It is likely that moderate or substantial impacts will be judged as giving rise to significant effects and negligible or slight impacts will not have a significant effect.
- 12.4.44 For human sensitive receptors, determination of significance will be based upon professional judgement of the overall significance of effects taking account of factors including existing and future air quality in the absence of the development, the extent of current and potential future exposure to impacts and the influence or assumptions adopted.
- 12.4.45 For ecological sensitive receptors, consideration of significance is focussed on the impacts on annual mean NO_x and NH₃ concentrations and nitrogen and acid deposition in the opening year (Ref 4). For NO_x and NH₃, if the change is less than 1% of the relevant critical level (30µg/m³ for NO_x and 1µg/m³ or 3µg/m³ for NH₃, depending on the presence or absence of lichens and bryophytes) then the effect is deemed not significant. For nitrogen and acid deposition, if the change is less than 1% of the relevant lower critical load (site specific, details obtained from APIS) then the effect is deemed not significant. However, where a change is greater than 1% of the relevant critical level / lower critical load the effect cannot be discounted as not significant and must be judged by a qualified Ecologist.

12.5 Assessment Assumptions and Limitations

- 12.5.1 The following general assumptions and limitations are applicable to the preliminary Air Quality assessment for all Sections of the Project. Any assumptions and limitations which are applicable to Section 5 of the Project are presented within **Supplementary PEI Report Volume 2 Part B Chapter 12 Air Quality**:
- There is limited information available on the number and type of plant and NRMM that will be used during the construction and maintenance phase. As such, the Supplementary PEI Report and the June 2025 PEI Report assessment does not include initial screening of potential effects due to NRMM.
 - Information on the duration and change in traffic flows associated with planned diversions, as well as the proposed routes, are to be determined. As such, the Supplementary PEI Report and the June 2025 PEI Report assessment does not

- include initial screening of potential effects due to traffic diversions associated with the construction of the Project.
- iii. The construction dust assessment reported in the Supplementary PEI Report and the June 2025 PEI Report is based on preliminary design and construction information and consequently, the findings presented may change as the design evolves.
 - iv. Construction traffic forecasts which have been used to undertake initial screening of likely Air Quality effects due to road traffic emissions, are based on an initial high-level estimate of construction materials and programme for the developing design as of Q4 2024. These are considered to provide a reasonable scenario for assessment. The screening outcomes reported within the Supplementary PEI Report and the June 2025 PEI Report may therefore change following further assessment of refined traffic projections.

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13. Climate Change

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13. Climate Change

13.1 Overview

- 13.1.1 This appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Agriculture and Soils assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). The appendix specifically addresses the proposed methodologies for the two separate aspects of the Climate Change assessment:
- i. the greenhouse gas (GHG) assessment considers the effect on the climate of GHG emissions arising from the Grimsby to Walpole Project (the Project), including how the Project would affect the ability of government to meet its carbon reduction plan targets. At the time of undertaking the assessment for the Supplementary Preliminary Environmental Information (PEI) Report, the early design stage meant that the level of design information available did not allow any calculation of likely GHG emissions. Therefore, it has not been possible to undertake the assessment of significance in line with the Institute of Environmental Management and Assessment (IEMA) guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance (Ref 2). Instead, a qualitative appraisal of likely significance has been undertaken at Supplementary PEI Report stage and emissions hotspots have been identified in order to feed into the ongoing design to avoid and reduce expected emissions from construction and operation. The full GHG assessment to be reported in the Environmental Statement (ES) will include a 'bottom-up' calculation¹ of the GHG emissions anticipated to be generated or avoided by the Project.
 - ii. the in-combination climate change impact (ICCI) assessment considers where the future changed climate may increase environmental impacts from the Project on all environmental receptors, beyond those impacts arising from present climate conditions. In line with the relevant IEMA guidance on In-Combination Climate Impacts assessment (Ref 3), the ICCI assessment will be undertaken after the likely significant environmental effects and their associated magnitude of effect have been identified within the other topic chapters being assessed as part of the EIA and reported within the ES. At Supplementary PEI Report stage, this appendix sets out the methodology for the proposed assessment. It's worth noting that the Climate Change chapter of the Grimsby to Walpole Environmental Impact Assessment (EIA) Scoping Report (Ref 4) proposed to scope out a standalone ICCI assessment in the ES and instead, each environmental chapter would take account of projected future climate change within their future baseline. For simplicity and to avoid excessive repetition across chapters, the ICCI assessment will now be reported within the Climate Change chapter of the ES and not within the individual topic chapters.

¹ A 'bottom up' calculation collates and analyses all materials and activities to be completed to deliver the Project.

- 13.1.2 Further to the Climate Change Resilience (CCR) Screening Assessment, which was reported in Appendix 18A of the Grimsby to Walpole EIA Scoping Report (Ref 4), it is agreed by the Planning Inspectorate (PINS) that provided that all design and control measures identified in the CCR are demonstrably secured, no further assessment of the Project's vulnerability to climate change is required.

13.2 Guidance Specific to Climate Change Assessment

GHG Assessment

- 13.2.1 Relevant guidance and standards that have informed the assessment methodology and qualitative assessment presented within the Supplementary PEI Report are listed below:
- i. the IEMA Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (Ref 2); and
 - ii. the Publicly Available Specification 2080 (PAS 2080:2023) on carbon management in Buildings and Infrastructure, a global standard for managing whole life carbon in the built environment and associated PAS 2080 Guidance Document (Ref 5).
- 13.2.2 The following further guidance is considered likely to be relevant to inform the 'bottom up' calculation of GHG emissions for the full GHG assessment, to be undertaken and reported within the ES:
- i. The Greenhouse Gas Protocol (Ref 6) - GHG Protocol establishes comprehensive global standardised frameworks to measure and manage GHG emissions from private and public sector operations, value chains and mitigation actions;
 - ii. Department for Energy Security and Net Zero Emission Conversion Factors 2023 (Ref 7); and
 - iii. Royal Institution of Chartered Surveyors (RICS) Whole life carbon assessment for the built environment (2024) (Ref 8). This standard addresses all element and component categories that make up a built asset, across every life cycle stage: from extracting the raw materials and manufacturing construction products, through construction and operation, to recovery or disposal at end of life. It also separately assesses the potential loads and benefits beyond the system boundary in the next life cycle.

ICCI Assessment

- 13.2.3 The relevant guidance and standards that will be taken into account as part of the ICCI assessment to be reported in the ES includes the IEMA (2020) 'Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation' (Ref 3).

13.3 Data Sources

GHG Assessment

- 13.3.1 The following data has been used to inform the baseline conditions:
- i. peaty soils location (England) British Geological Society (BGS) & National Soil Resources Institute (NSRI) (Ref 9).
- 13.3.2 At the time of undertaking the assessment for the Supplementary PEI Report, the early design stage meant that the following data were not available but this data will be included within the ES:
- i. data on land use change, including existing and proposed land use within areas expected to change as a result of the Project; and
 - ii. high level Bill of Quantities² and activity data relating to the construction of the Project.

ICCI Assessment

- 13.3.3 The following data will be used to inform the existing and future climate change projections (the baseline conditions) for the ICCI assessment to be reported within the ES:
- i. UK Climate Projections (UKCP18) – regional (UKCP18 Regional (12 km) models) (Ref 9), probabilistic projections and factsheets. UKCP18 is the latest projections dataset for the UK, produced by the UK Met Office.
 - ii. HadUK-Grid Met Office (Ref 10) – HadUK-Grid is an observational gridded dataset produced by the UK Met Office. The gridded data sets are based on the archive of UK weather observations held at the Met Office.
 - iii. United Kingdom Climate Risk Indicators data – provides information on future change to indicators of climate risks across the UK, including wildfire daily hazard assessment data which provides a five-day summary for wildfire that could affect the UK, based on UKCP18 projections (Ref 11).

13.4 Approach to Climate Change assessment

Scope of Assessment

- 13.4.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 12) provided by the Planning Inspectorate (PINS) on behalf of the Secretary of State, following the submission of the EIA Scoping Report (Ref 4). A summary of the Scoping Opinion together with a response against each point of relevance to the Climate Change chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.

² A list of materials and services required to deliver a project. The list typically includes materials, labour, and quantities of each

13.4.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 13). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.

13.4.3 As noted in section 13.1, the high-level scope of the Climate Change assessment covers two separate aspects.

GHG Assessment

13.4.4 The GHG assessment considers the effect on the climate of GHG emissions arising from the Project, including how the Project would affect the ability of government to meet its carbon reduction plan targets.

ICCI Assessment

13.4.5 The ICCI assessment considers where the future changed climate may increase environmental impacts from the Project on all environmental receptors, beyond those impacts arising from present climate conditions.

Study Areas

GHG Assessment

13.4.6 The Study Area for the GHG assessment includes the whole spatial extent of the Project (therefore including all seven Sections of the Project route described in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description** and demonstrated in **Supplementary PEI Report Volume 2 Part A Figure 1.1 Draft Order Limits**.

13.4.7 The scope for the GHG assessment includes all material sources and removals of GHG emissions arising from pre-construction, construction, operation and maintenance of the Project. The detailed scope of emissions sources and removals are provided in Table 13.1 below.

ICCI Assessment

13.4.8 The Study Area for the ICCI assessment to be reported in the ES will be defined by the Study Areas contained within the methodology sections in each respective environmental discipline chapter of the ES.

13.5 Assessment Methodology

GHG Assessment

13.5.1 As noted in section 13.1 above, a qualitative appraisal of likely significance has been undertaken at Supplementary PEI Report stage and emissions hotspots have been identified.

13.5.2 The GHG assessment to be reported in the Environmental Statement (ES) will quantify the GHG emissions anticipated to be generated or avoided by the Project.

This will be reported in tonnes of carbon dioxide equivalent (tCO₂e), a single metric of the global warming potential of the main GHGs. This approach is consistent with the principles set out in IEMA guidance (Ref 1). Where it is not possible to quantify emissions, a qualitative assessment will be provided.

- 13.5.3 **Table 13.1** provides a summary of the emissions sources identified through the Project lifecycle that could give rise to a potentially significant effect on the global atmosphere and which sources will be scoped into and out of the assessment to be reported in the ES as agreed with PINS in the Scoping Opinion.

Table 13.1 PAS 2080 life cycle stages and individual modules scoped into and out of the GHG assessment, to be reported in the ES

PAS 2080 Life cycle stage	PAS 2080 Boundary Stage	PAS 2080 Module	Description/ Pathway	Include d in scope?	Justification
Before use Stage	Pre-construction	A0	Land and associated fees/advice	✗	GHG emissions from preliminary studies and works are largely office-based and are assumed to be insignificant.
	Product stage	A1	Raw materials supply	✓	A1-A3 emissions (i.e. from raw material extraction, product processing, and final product manufacture, its energy use, and waste management within these processes, transportation within the supply chain, and manufacture) will be quantified to understand the emissions associated with the construction of the Project, for example, the use of steel or concrete in pylon construction and any sulphur hexafluoride (SF6) released (if used) during manufacture of substation equipment such as circuit breakers ³ .
		A2	Transport	✓	
		A3	Manufacturing	✓	
	Construction Process stage	A4	Transport to works site	✓	A4 emissions (transport of all materials and construction workers to works site) will be quantified to understand the emissions associated with the construction of the Project.
		A5	Construction/ installation processes	✓	A5 emissions (construction/installation processes) will be quantified to understand the emissions associated with the construction of the Project.

³ The potential impact of SF6 is scoped in to reflect a worst case scenario in terms of GHG emissions. However, National Grid Policy Statement PS(T)_005 Insulation and interrupting Gases (Ref 4) notes that 'To meet National Grid's environmental commitment to a 50% reduction in SF6 emissions from a 2018/19 baseline by 2030, and environmental ambition to eliminate SF6 equipment by 2050, the procurement of new SF6 equipment is no longer acceptable. Where use of SF6-free technology for a specific application is not technically viable, or is commercially restrictive, a deviation shall be sought. The need for a deviation shall be applied to all projects at the pre-DID Freeze stage as of 1st March 2024'.

PAS 2080 Life cycle stage	PAS 2080 Boundary Stage	PAS 2080 Module	Description/ Pathway	Include d in scope?	Justification
Use Stage (Operation)	Installed products and materials	B1	Use	✓	If used, small quantities of sulphur hexafluoride (SF6) would be released during the lifecycle of electrical switchgear equipment and circuit breakers, including in their manufacture, installation, operation, maintenance and decommissioning. Larger leaks can also occur during their lifecycle, for example due to equipment malfunction. SF6 would therefore be a potential source of GHG emissions during operation of the Project ⁴ . It is anticipated that any associated GHG emissions will be estimated as part of the GHG assessment. There are no other significant additional sources of SF6 emissions identified during operation of the Project.
		B2	Maintenance of the built asset components and systems over the Project design life.	✗	The Project is not designed with the expectation of any significant plant maintenance activities and therefore emissions due to these activities are expected to be minimal.
		B3	Repair	✓	

⁴ The potential impact of SF6 is scoped in to reflect a worst case scenario in terms of GHG emissions. However, National Grid Policy Statement PS(T)_005 Insulation and interrupting Gases (Ref 14) notes that *‘To meet National Grid’s environmental commitment to a 50% reduction in SF6 emissions from a 2018/19 baseline by 2030, and environmental ambition to eliminate SF6 equipment by 2050, the procurement of new SF6 equipment is no longer acceptable. Where use of SF6-free technology for a specific application is not technically viable, or is commercially restrictive, a deviation shall be sought. The need for a deviation shall be applied to all projects at the pre-DID Freeze stage as of 1st March 2024’.*

PAS 2080 Life cycle stage	PAS 2080 Boundary Stage	PAS 2080 Module	Description/ Pathway	Include d in scope?	Justification
		B4	Replacement	✓	<p>B3 and B4 emissions will be quantified using the same method as the construction works and supply chain GHG emissions.</p> <p>At this stage it is assumed this will cover the new overhead line and proposed substations.</p> <p>The following list provides a summary of key asset components and replacement requirements (Ref 14). See Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description for further information:</p> <ul style="list-style-type: none"> • Overhead Lines: Between 40 and 50 years for overhead line conductors and 20-40 years for insulators • Pylons: 80 years, although there are options available for re-use at the end of the design life, including use of pylons for new replacement conductors. • Substations: 40 years.
		B5	Refurbishment	✗	<p>Excluded. It is unusual for elements of the National Grid Electricity Transmission plc (National Grid) transmission system to be decommissioned and the site reinstated. In general, assets will be replaced towards the end of an assets design life (which will vary depending on the asset and the asset condition throughout its operational life). See Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description for further information.</p>
		B6	Operational energy use	✗	<p>Excluded. Minimal operational energy use or water use expected and therefore emissions will not be material to the assessment conclusions. This follows the approach stated in IEMA guidance states that '<i>Where expected emissions are less than 1 per cent of total emissions, and</i></p>
		B7	Operational water use	✗	

PAS 2080 Life cycle stage	PAS 2080 Boundary Stage	PAS 2080 Module	Description/ Pathway	Include d in scope?	Justification
					<i>where all such exclusions total a maximum of 5 per cent of total emissions; all exclusions should be clearly stated’.</i>
		B8	Other operational processes	✓	<p>When electrical currents travel on a network, some energy is dissipated in the form of heat, and is “lost” due to the electrical resistance in the network. This energy is known as network losses.</p> <p>A portion of the electricity purchased from the power generators will be consumed during its transmission and distribution to end-customers.</p> <p>A qualitative assessment of emissions from network losses will be included. It is not considered feasible to quantify these losses and the nature of the Project is such that it largely transmits rather than uses energy.</p>
		B9	Users utilisation of infrastructure	✗	<p>Excluded. The Project is not expected to have any direct and quantifiable impact on GHG emissions from electricity use that is distinct from wider national trends on grid decarbonisation. Emissions associated with the use of energy at the point of energy consumption will largely be dictated by the means of generation rather than transmission.</p> <p>The anticipated reduction in GHG emissions from non-renewable energy generation sources once the proposed renewable energy generation can connect to the reinforced network (the Project) is included in Module D (Exported utilities (i.e. electric energy)).</p>
		C1	Deconstruction	✗	

PAS 2080 Life cycle stage	PAS 2080 Boundary Stage	PAS 2080 Module	Description/ Pathway	Include d in scope?	Justification
		C2	Transport	✗	End of life (C1-C4) impacts will not be considered due to the long design life of the Project. It is unusual for elements of the National Grid transmission system to be permanently decommissioned and the site reinstated. Note that parts of the existing Grimsby West Substation are planned to be decommissioned (in full or part) as part of the construction of the Project, and emissions associated with this will be considered as part of the construction phase.
		C3	Waste processing for reuse, recycling and/or energy recovery	✗	
		C4	Disposal	✗	
		D	Land use emissions and sequestration	✓	A qualitative assessment will be provided to understand the potential impact of removal of any vegetation due to construction of the Project and the potential impact of landscaping and habitat creation proposed as part of the design.
		D	Exported utilities (i.e. electric energy)	✓	<p>The Project will facilitate a reduction in GHG emissions from non-renewable energy generation sources once the proposed renewable energy generation can connect to the reinforced network.</p> <p>A qualitative assessment will be provided as there is no practical mechanism to quantify the carbon impact without carrying out a time-based analysis of relative grid carbon emissions factors over the operational life of the Project, seeking to identify over what period electricity will be supplied to UK at grid intensities above/below the grid average.</p>

- 13.5.4 Expected GHG emissions arising from the Project will be quantified using a calculation-based methodology as per the following equation and aligned with the GHG Protocol global standard for measuring and managing GHG emissions:
Material/Activity data x GHG emissions factor = GHG emissions.
- 13.5.5 The methodology focuses on assessing the impact of the Project on GHG emissions by quantifying the GHG emissions arising from each lifecycle stage. Emissions associated with the Project will be compared to the baseline and future baseline Do-Minimum scenario⁵. If relevant GHG material or activity data are unavailable at the time of undertaking the assessment to be reported within the ES, the assessment may be more qualitative and/or assumptions and estimations developed. Any assumptions, inclusions and exclusions that inform the GHG emissions calculation will be clearly described.
- 13.5.6 The significance criteria for the GHG assessment will take account of the Project's GHG emissions in the context of policy, and specifically the UK's target of net zero by 2050. This will consider the Project's net GHG emissions, but also whether the Project contributes to reducing GHG emissions consistent with a trajectory towards net zero by 2050.
- 13.5.7 The net GHG emissions associated with the Project will also be contextualised against appropriate existing national carbon budgets where practicable to understand its relative contribution to climate change. Where possible, this will also be contextualised against industry specific carbon budgets.
- 13.5.8 The assessment process will include work with the wider design team to identify opportunities to reduce the whole-life carbon of the Project.

Sensitivity

- 13.5.9 The global atmosphere is the receptor for the purposes of the GHG assessment. The sensitivity of the global atmosphere to GHG emissions is 'high'. The rationale is as follows:
- i. GHG emission impacts could compromise the Climate Change Committee's (CCC) sectoral construction and net zero pathways and therefore the ability of the UK to meet its future carbon reduction trajectory;
 - ii. GHG emission impacts could compromise the UK's ability to reduce its GHG emissions and therefore the ability to meet its future carbon budgets;
 - iii. The extreme importance of limiting global warming to below 2 °C above industrial levels, while pursuing efforts to limit such warming to 1.5 °C as set out in the Paris Agreement and a recent report by the Intergovernmental Panel on Climate Change (IPCC) highlighted the importance of limiting global warming below 1.5 °C (Ref 15); and
 - iv. Disruption to global climate is already having diverse and wide ranging impacts on the environment, society, economic and natural resources. Known effects of climate change include increased frequency and duration of extreme weather events, temperature changes, rainfall and flooding, and sea level rise and ocean

⁵ Aligning with IEMA (2022) guidance (Ref 1), the baseline (Do-Minimum scenario) is the reference against which the impact of the Project will be compared and assessed. The Do-Minimum scenario comprises the existing GHG emissions within the assessment scope without implementation of the Project (the existing situation where the Project is not implemented).

acidification. These effects are largely accepted to be negative, profound, global, likely, long-term to permanent and are transboundary and cumulative from many global actions.

Magnitude

- 13.5.10 As noted in section 13.1 above, at the time of undertaking the assessment for the Supplementary PEI Report, the early design stage meant that the level of design information available did not allow any ‘bottom up’ calculation of likely GHG emissions and therefore a qualitative appraisal of likely significance has been undertaken and emissions hotspots have been identified and reported in **Supplementary PEI Report Volume 2 Part C Chapter 8 Climate Change**.
- 13.5.11 For the full assessment to be reported in the ES, the estimated GHG emissions from the Project will be considered in the context of the UK carbon budgets (Ref 15), summarised in **Table 13.2** below.
- 13.5.12 The UK carbon budgets are in place to restrict the amount of GHG emissions the UK can emit in a five-year period. The UK is currently in the 4th carbon budget period, which runs from 2023 to 2027. The 4th and 5th carbon budgets reflect the previous 80 per cent reduction target by 2050. The 6th carbon budget aligns with the legislated 2050 net zero commitment.

Table 13.2 Carbon budget periods

Carbon Budget and Period	Carbon Budget Limit	Reduction below 1990 levels
Fourth (2023-2027)	1,950 MtCO ₂ e	50 per cent by 2025
Fifth (2028-2032)	1,725 MtCO ₂ e	68 per cent by 2030*
Sixth (2033-2037)	965 MtCO ₂ e	78 per cent by 2035

* Originally 57 per cent when 5th carbon budget was enshrined in law, was increased to 68 per cent as the UK's National Determined Contribution ahead of the United Nations' COP26 in November 2021 (Ref 6).

- 13.5.13 It is noted that the contribution of most individual projects to national level budgets will be small, so the UK context will have limited value. It is proposed that the GHG assessment, therefore, uses the IEMA guidance (Ref 1) to assess the significance of effects with the UK carbon budgets being used to provide context to the GHG emissions.

Significance of Effects

- 13.5.14 IEMA guidance (Ref 1) provides criteria for assessing the significance of GHG emissions effects. Five levels of significance are presented which focus on how the Project makes a relative contribution towards achieving a science based 1.5°C aligned transition towards net zero and the levels of mitigation applied. The different levels of significance are plotted against the UK's net zero compatible trajectory as presented in **Table 13.3** to determine the Project's significance.
- 13.5.15 As noted in section 13.1 above, at the time of undertaking the assessment for the Supplementary PEI Report, the early design stage meant that the level of design information available did not allow any calculation of likely GHG emissions and therefore a qualitative appraisal of likely significance against the IEMA guidance

criteria for assessing the significance of GHG emissions effects has been undertaken and emissions hotspots have been identified and reported in **Supplementary PEI Report Volume 2 Part C Chapter 8 Climate Change**.

- 13.5.16 For the full assessment to be reported in the ES, the estimated GHG emissions from the Project will be considered against the IEMA guidance criteria for assessing the significance of GHG emissions effects.

Table 13.3 IEMA guidance levels of significance

Effects	Significance level	Description	Example in the guidance
Significant adverse	Major adverse	A project that follows a 'business-as-usual' or 'Do-minimum' approach and is not compatible with the UK's net zero trajectory, or accepted aligned practice or area-based transition targets. It is down to the practitioner to differentiate between the 'level' of significant adverse effects e.g. 'moderate' or 'major' adverse effects.	The project's GHG impacts are not mitigated or are only compliant with Do-Minimum standards set through regulation, and do not provide further reductions required by existing local and national policy for projects of this type. A project with major adverse effects is locking in emissions and does not make a meaningful contribution to the UK's trajectory towards net zero.
Significant adverse	Moderate adverse	The project's GHG impacts are partially mitigated and may partially meet the applicable existing and emerging policy requirements but would not fully contribute to decarbonisation in line with local and national policy goals for projects of this type.	A project with moderate adverse effects falls short of fully contributing to the UK's trajectory towards net zero.
Not significant	Minor Adverse	A project that is compatible with the budgeted, science-based 1.5°C trajectory (in terms of rate of emissions reduction) and which complies with up-to-date policy and 'good practice' reduction measures to achieve that. It may have residual emissions but is doing enough to align with and contribute to the relevant transition scenario, keeping the UK on track towards net zero by 2050	The project's GHG impacts would be fully consistent with applicable existing and emerging policy requirements and good practice design standards for projects of this type. A project with minor adverse effects is fully in line with measures necessary to achieve the UK's trajectory towards net zero.

Effects	Significance level	Description	Example in the guidance
		with at least a 78 per cent reduction by 2035 and thereby potentially avoiding significant adverse effects.	
Not significant	Negligible	A project that achieves emissions mitigation that goes substantially beyond the reduction trajectory, or substantially beyond existing and emerging policy compatible with that trajectory and has minimal residual emissions. This project is playing a part in achieving the rate of transition required by nationally set policy commitments.	The project's GHG impacts would be reduced through measures that go well beyond existing and emerging policy and design standards for projects of this type, such that radical decarbonisation or net zero is achieved well before 2050. A project with negligible effects provides GHG performance that is well 'ahead of the curve' for the trajectory towards net zero and has minimal residual emissions.
Not significant	Beneficial	A project that causes GHG emissions to be avoided or removed from the atmosphere. Only projects that actively reverse (rather than only reduce) the risk of severe climate change can be judged as having a beneficial effect.	The project's net GHG impacts are below zero and it causes a reduction in atmospheric GHG concentration, whether directly or indirectly, compared to the without-project baseline. A project with beneficial effects substantially exceeds net zero requirements with a positive climate impact.

ICCI Assessment

- 13.5.17 As noted in section 13.1 above, in line with the relevant IEMA guidance on In-Combination Climate Impacts assessment, the ICCI assessment will be undertaken after the likely significant environmental effects and their associated magnitude of effect have been identified within the other topic chapters being assessed as part of the EIA and reported within the ES. No assessment has been undertaken at Supplementary PEI Report stage. This section therefore sets out the proposed methodology for the assessment to be reported within the Climate Change chapter of the ES.
- 13.5.18 The ICCI assessment determines the extent to which climate change exacerbates or reduces a potential effect of the Project on any environmental receptors. The assessment methodology is based on the steps set out within the IEMA guidance on ICCI (Ref 3) and will be undertaken after the likely effects to be reported in the ES have been identified by each environmental discipline.
- 13.5.19 The ICCI assessment will be undertaken by the relevant competent experts for each individual environmental discipline in collaboration with the competent climate expert.

- 13.5.20 The steps of ICCI assessment that will be undertaken for the ES are as follows:
- i. the relevant competent expert from each environmental discipline will assess the significance of the Project's effects on their identified receptors under the existing climate baseline using their topic-specific standard methodologies for each relevant environmental topic (to be reported within their topic chapter of the ES);
 - ii. the relevant competent expert from each environmental discipline will collate the likely effects identified as part of the EIA, which will be reported within their chapter of the ES;
 - iii. using information on future climate conditions provided by the competent climate expert, the relevant competent expert from each environmental discipline will evaluate the susceptibility and vulnerability of their topic receptors to future climatic projections as well as evaluating whether their value or importance would change with future climatic projections identified;
 - iv. the relevant competent expert from each environmental discipline will also consider the magnitude of the effects identified by their topic and evaluate whether the probability and/or consequence of the effect changes with future climatic projections;
 - v. the relevant competent expert from each environmental discipline will assess the in-combination climate impact, applying the significance criteria used by their environmental topic and using the outcome of the evaluation of sensitivity of receptors/magnitude of effect identified above; and
 - vi. the relevant competent expert from each environmental discipline will determine whether the significance/degree of the effect remains the same or changes with the future climate conditions and identify any additional mitigation if required.
- 13.5.21 The ICCI assessment will be reported in the Climate Change chapter of the ES after the likely effects have been identified by each environmental discipline under the existing climate baseline.

13.6 Assumptions and Limitations

GHG Assessment

- 13.6.1 As noted in section 13.1 above, at the time of undertaking the assessment for the Supplementary PEI Report, the early design stage meant that the level of design information available did not allow any calculation of likely GHG emissions and therefore a qualitative appraisal of likely significance has been undertaken and emissions hotspots have been identified and reported in **Supplementary PEI Report Volume 2 Part C Chapter 8 Climate Change**.
- 13.6.2 The following limitations and assumptions have been identified for the full GHG assessment to be presented within the ES:
- i. The GHG assessment to be reported in the ES will be undertaken using the best available information at time of assessment. A reasonable worst case assessment will be developed using appropriate industry benchmarks, and conservative assumptions on materials, design, assembly, earthworks and use of components to provide a robust assessment of likely GHG emissions.

- ii. For the GHG assessment to be reported in the ES, assumptions will be made about design and construction information to inform the assessment of GHG emissions. In general, any assumptions made will seek to reflect a reasonable worst case (i.e. seeking not to under-report GHG emissions arising from the Project). Assumptions/judgements in each case will be made from either:
 - emerging design detail;
 - engineering specialist knowledge;
 - environmental specialist knowledge;
 - climate change/carbon specialist knowledge;
 - manufacturer specifications; or
 - proxy engineering data from previous comparable projects.
- iii. The methodology used to calculate the UK carbon budgets is different to that used for the calculation of life cycle emissions for the Project and therefore caution must be taken when making a direct comparison. However, for the purposes of identifying the extent to which the Project may impact the ability of the UK government to meet its carbon budgets it is necessary to make this comparison to put the Project into context. Additionally, the GHG emissions to be calculated for the Project will be best estimations based on the design information available at the time of the assessment and the carbon factors utilised.
- iv. Where it is not possible to quantify emissions in the ES, a qualitative assessment will be provided.

13.6.3 These key parameters and assumptions will be reviewed based on the design presented in the Development Consent Order (DCO) application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.

ICCI Assessment

13.6.4 The assessment assumptions and limitations will be identified at the time of undertaking the ICCI assessment and will be reported within the ES.

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14. Health and Wellbeing

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14. Health and Wellbeing

14.1 Overview

- 14.1.1 This appendix to the Supplementary Preliminary Environmental Information (PEI) Report describes the methodology used in the production of the preliminary Health and Wellbeing assessment for this Supplementary PEI Report, the previously published June 2025 PEI Report (Ref 1) and proposed to be adopted during preparation of the Environmental Statement (ES) for the Grimsby to Walpole Project (the Project). It describes the methods used to determine the baseline conditions, sensitivity of the receptors and magnitude of change, and sets out the approach to judging the level or importance of likely effects.

14.2 Guidance specific to Health and Wellbeing assessment

- 14.2.1 Relevant guidance and standards that have informed the assessment process are listed below (but not limited to) and will also be taken into account as part of the assessment:
- i. Institute of Environmental Management and Assessment (IEMA) (2022) Effective Scoping of Human Health in Environmental Impact Assessment (Ref 2);
 - ii. IEMA (2022) Determining Significance for Human Health in Environmental Impact Assessment (Ref 3);
 - iii. Highways England (2020) Design Manual for Roads and Bridge Document LA112 (Ref 4);
 - iv. IEMA (2017) Health in Environmental Impact Assessment: A Primer for a Proportionate Approach (Ref 5);
 - v. Public Health England (PHE) The Public Health England Strategy 2020 to 2025 (Ref 6);
 - vi. Public Health England (2020) Advice on the content of Environmental Statements accompanying an application under the Nationally Significant Infrastructure Planning Regime (Ref 7);
 - vii. Institute of Health Equality (2010) Fair Society, Healthy Lives: The Marmot Review (Ref 8);
 - viii. Institute of Health Equality (2020) Healthy Equity in England: The Marmot Review 10 Years On (Ref 9);
 - ix. Institute of Health Equality (2020) Build Back Fairer: The COVID-19 Marmot Review (Ref 10);
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- xi. International Commission on Non-Ionising Radiation Protection (1998) Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields. Health Physics, 74(4), p.494 (Ref 12); and
- xii. The Control of Electromagnetic Fields at Work Regulations (2016) (Ref 13).

14.3 Data Sources

14.3.1 The following data has been used to inform the baseline conditions:

- i. Ministry of Housing, Communities and Local Government (MHCLG) (2019) Indices of Multiple Deprivation (Ref 14);
- ii. Office of National Statistics (ONS) (2022) Census 2021 (Ref 15);
- iii. ONS (2023) Annual Population Survey (Ref 16);
- iv. Office for Health Improvement and Disparities (OHID) (2022) Local Health, August 2022 Update (Ref 17);
- v. Ordnance Survey (Accessed 2024) AddressBase Plus (Ref 18);
- vi. Public Health England (2021-2023) Local Health, public health data for small geographic areas (Ref 19); and
- vii. Sustrans (Accessed 2024) Open Data Portal (Ref 20).

14.4 Approach to Health and Wellbeing Assessment

Scope of the Assessment

- 14.4.1 The scope of the assessment has been informed by the Scoping Opinion (Ref 21) provided by the Planning Inspectorate on behalf of the Secretary of State, following the submission of the Environmental Impact Assessment (EIA) Scoping Report (Ref 22). The scope has also been informed through consultation and engagement with relevant consultees. A summary of the Scoping Opinion together with a response against each point of relevance to the Health and Wellbeing chapter is provided in **Supplementary PEI Report Volume 3 Part A Appendix 4A Planning Inspectorate Scoping Opinion Responses**.
- 14.4.2 Non-statutory consultation feedback was discussed within the Grimsby to Walpole Stage 1 Consultation Feedback Report (Ref 23). Stage 2 Consultation feedback relevant to Section 5 is discussed within the **Grimsby to Walpole Section 5 Consultation Feedback Report**.
- 14.4.3 The scope of the construction assessment covers potential impacts upon the following:
 - i. employment;
 - ii. neighbourhood quality;
 - iii. access to promoted recreational routes and open spaces; and
 - iv. access to healthcare and social infrastructure.
- 14.4.4 The scope of the operation assessment covers potential impacts upon the following:

- i. neighbourhood quality;
- ii. mental health effects of Electromagnetic Fields (EMF);
- iii. access to healthcare and social infrastructure; and
- iv. access to promoted recreational routes and open spaces.

Study Areas

- 14.4.5 The route-wide Study Area for the assessment will vary by the type of health impact being assessed, but will include the whole spatial extent of the Project given this a route-wide assessment.
- 14.4.6 The Study Area will differ based on the receptor impacted. Receptors within 500 m of the draft Order Limits are likely to experience environmental effects arising from construction/operation activities; whilst community severances effects could be experience beyond 500 m particularly in rural areas; and employment effects will be experienced from a broader area.
- 14.4.7 The Study Area will comprise of electoral wards in which the Project is located and residential, community and healthcare facilities and open spaces within 500 m of the draft Order Limits. This area is considered sufficient to cover the likely extent of environmental effects arising from the construction, maintenance and/or operational activities of the Project that are likely to give rise to Health and Wellbeing impacts. Where data for the Study Area is not available at an electoral ward level, local authority level data will be provided.
- 14.4.8 The electoral wards and local authorities are aligned with the seven 'Sections' of the Project route that comprise the Study Area for this assessment, as detailed in **Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description**. The Sections are split from north to south by the geographical proposed alignment of the draft Order Limits are listed as follows:
- i. Section 1 – New Grimsby West Substation;
 - ii. Section 2 – New Grimsby West Substation to New Lincolnshire Connection Substation A;
 - iii. Section 3 – New Lincolnshire Connection Substations A and B;
 - iv. Section 4 – New Lincolnshire Connection Substation B to New Weston Marsh Substations A and B;
 - v. Section 5 – New Weston Marsh Substations A and B;
 - vi. Section 6 – New Weston Marsh Substations A and B to New Walpole B Substation; and
 - vii. Section 7 – New Walpole B Substation.
- 14.4.9 The Study Area sits alongside corresponding regions of Yorkshire and the Humber (region for North East Lincolnshire), East Midlands (region for East Lindsey, West Lindsey, Boston and South Holland) and East of England (region for Fenland and King's Lynn and West Norfolk) and the national comparator of England.

14.4.10 **Table 14.1** below sets out the electoral wards and local authorities (district) each Section of the Project passes through. A further list containing the specific communities located within each Section can be found in Table 7A.1 within **Supplementary PEI Report Volume 3 Part C Appendix 7A Health and Wellbeing Baseline Statistics**.

Table 14.1 Electoral wards and local authorities within Grimsby to Walpole Sections

Section	Section Name	Electoral Ward	Local Authority (District)
1	New Grimsby West Substation	<ul style="list-style-type: none"> • Wolds • Freshney • Caistor and Yarborough 	North East Lincolnshire West Lindsey
2	New Grimsby West Substation to New Lincolnshire Connection Substation A	<ul style="list-style-type: none"> • Wolds • Waltham • South • Holton-le-Clay and North Thoresby • Fulstow • Grimoldby • Legbourne • Withern and Theddlethorpe 	North East Lincolnshire East Lindsey
3	New Lincolnshire Connection Substations A and B	<ul style="list-style-type: none"> • Withern and Theddlethorpe • Alford 	East Lindsey
4	New Lincolnshire Connection Substation B to New Weston Marsh Substations A and B	<ul style="list-style-type: none"> • Alford • Willoughby with Sloothby • Chapel St. Leonards • Ingoldmells • Burgh le Marsh • Croft • Wainfleet • Friskney • Halton Holegate • Sibsey and Stickney • Swineshead and Holland Fen • Kirkton and Frampton • Five Village • Old Leake and Wrangle • Donington, Quadring and Gosberton 	East Lindsey Boston South Holland

Section	Section Name	Electoral Ward	Local Authority (District)
		<ul style="list-style-type: none"> Pinchbeck and Surfleet Moulton, Weston and Cowbit 	
5	New Weston Marsh Substations A and B	<ul style="list-style-type: none"> Moulton, Weston and Cowbit Pinchbeck and Surfleet Spalding St Pauls Ward Spalding Castle 	South Holland
6	New Weston Marsh Substations A and B to New Walpole B Substation	<ul style="list-style-type: none"> Moulton, Weston and Cowbit Spalding St Paul's Ward Whaplode and Holbeach St John's Fleet Gedney The Saints Leverington Long Sutton Walsoken, West Walton and Walpole 	South Holland Fenland King's Lynn and West Norfolk
7	New Walpole B Substation	<ul style="list-style-type: none"> Walsoken, West Walton and Walpole 	King's Lynn and West Norfolk

Assessment Methodology

- 14.4.11 The following section summarises the methodology proposed to be used for the Health and Wellbeing assessment which builds on the general assessment methodology presented in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information** and the new IEMA guidance (Ref 2 and Ref 3) for the assessment of significance for health effects.
- 14.4.12 The Health and Wellbeing assessment will include:
- Policy review: a review of the relevant national and local health policy context;
 - Baseline conditions: a profile of the local community will be compiled using publicly available baseline data, focusing on population demographics, socio-economic status and health indicators;
 - Evidence review: a review of publicly available evidence will be undertaken to establish the links between the identified health determinants and potential health outcomes;
 - Assessment of health effects: a qualitative assessment will be undertaken to identify impacts on the determinants of health, and potential health outcomes for the study population. The qualitative assessment of health outcomes will be

based on magnitude, duration and exposure of impact taking account of the size and sensitivity of population exposed; and

- v. Mitigation and enhancement: subject to the outcome of the assessment, measures to mitigate significant adverse effects and improve health outcomes will be identified.

14.4.13 Wherever possible, the impacts identified in the assessment will be appraised against relevant national standards. Where relevant standards do not exist, professional experience and expert judgement will be applied and justified.

14.4.14 The significance of an effect is determined based on the magnitude of an impact and the sensitivity of the receptor affected by the impact, as set out below.

Sensitivity

14.4.15 The sensitivity of health effects is driven by a number of indicative factors which are set out below and are based on guidance set out in Section 4.4.15 (Ref 3). A potential health effect may not meet all of the criteria in a particular category or may exhibit criteria across two or more categories. Therefore, justification for the selection of sensitivity criteria will be provided as detailed in **Table 14.2**.

Table 14.2 Sensitivity classification

Sensitivity	Indicative criteria
Very high	<ul style="list-style-type: none"> • Very high levels of deprivation. • Complete severance between communities and their assets with little/no accessibility provision. • Community services and social infrastructure is used very frequently (daily). • Alternative community services and social infrastructure are only available outside of the local planning authority area. • Regularly used by vulnerable travellers such as the elderly, school children and people with disabilities who could be considerably affected by small changes in the baseline due to potentially different needs.
High	<ul style="list-style-type: none"> • High levels of deprivation (including pockets of deprivation). • High proportion of residents with very poor health status when compared to the national average. • People who are prevented from undertaking daily activities and/or with very low capacity to adapt. • Community services and social infrastructure is used frequently (weekly). • Substantial severance between communities and community assets, with limited accessibility provision. • Alternative facilities are only available in the wider local planning authority/Reliance on shared resources (between the population and the Project).
Medium	<ul style="list-style-type: none"> • Moderate levels of deprivation.

Sensitivity	Indicative criteria
	<ul style="list-style-type: none"> • High proportion of residents with poor health status when compared to the national average. • People who are highly limited from undertaking daily activities. • Community services and social infrastructure is used reasonably frequent (monthly). • There is severance between communities and community assets, but with existing accessibility provision. • Limited alternative facilities are available at a local level within adjacent communities/Few alternatives to shared resources.
Low	<ul style="list-style-type: none"> • Low levels of deprivation. • High proportion of residents with fair health status when compared to the national average. • People who are slightly limited from undertaking daily activities. • Community services and social infrastructure is used infrequently (monthly or less frequent). • Limited existing severance between communities and community assets. • Alternative facilities are available at a local level within the wider community/Many alternatives to shared resources.
Negligible	<ul style="list-style-type: none"> • Very low levels of deprivation. • High proportion of residents with good health status when compared to the national average. • People who are not limited from undertaking daily activities. • Community services and social infrastructure is used very infrequently (a few occasions yearly). • No or limited severance or accessibility issues between communities and community assets. • Alternative facilities are available within the same community/No shared resources.

Magnitude

- 14.4.16 Magnitude of impact is driven by a number of indicative factors which are set out in **Table 14.3** and are based on guidance set out in section 10.4.15 (Ref 3). A potential health effect may not meet all of the criteria in a particular category or may exhibit criteria across two or more categories. Therefore, justification for the selection of magnitude criteria will be provided.

Table 14.3 Magnitude classification

Magnitude	Indicative criteria
Large	<ul style="list-style-type: none"> • High exposure or scale; • long-term duration (lasting five years or more); • continuous frequency; • majority of population affected; • permanent change; and • substantial service quality implications.
Medium	<ul style="list-style-type: none"> • Low exposure or medium scale; • medium-term duration (lasting one to five years); • frequent events; • large minority of population affected; • gradual reversal; and • small service quality implications.
Small	<ul style="list-style-type: none"> • Very low exposure or small scale; • short-term duration (lasting less than one year); • occasional events; • small minority of population affected; • rapid reversal; and • slight service quality implications.
Negligible	<ul style="list-style-type: none"> • Negligible exposure or scale; • very short-term duration; • one-off frequency; • very few people affected; • immediate reversal once activity complete; and • no service quality implication.

Significance of Effects

14.4.17 The overall effects of the Project are defined as one of the following:

- i. Beneficial – an advantageous or beneficial effect on a receptor;
- ii. Negligible – an imperceptible effect on a receptor;
- iii. Adverse – a disadvantageous or negative effect on a receptor; and/or
- iv. No effect – no discernible effects on a receptor.

14.4.18 Duration of effect is also considered, with more weight given to permanent changes than to temporary ones.

- 14.4.19 Where an effect is assessed as being beneficial or adverse, the effect will be classified as major, moderate, minor or negligible. The assessment of significance will be informed by considering the sensitivity of the receptor (**Table 14.2**) and the magnitude of impact (**Table 14.3**).
- 14.4.20 For the purposes of this assessment, moderate and major effects will be considered to represent significant effects as shown in **Table 14.4**.

Table 14.4 Determination of significance matrix

Impact Magnitude	Sensitivity				
	Very High	High	Medium	Low	Negligible
Large	Major	Major	Major/moderate	Moderate/minor	Minor/negligible
Medium	Major/moderate	Major/moderate	Moderate	Minor	Minor/negligible
Small	Major/moderate/minor	Moderate/minor	Minor	Minor	Negligible
Negligible	Minor/negligible	Minor/negligible	Minor/negligible	Negligible	Negligible

14.5 Assessment Assumptions and Limitations

- 14.5.1 The assessment has been undertaken based on preliminary Project design information. This information is iterative and will be updated in the ES as the design evolves and changes are made.
- 14.5.2 The following limitations and assumptions have been identified for this assessment:
- Preliminary traffic assessments have not identified permanent or long-term road closures at this stage. The preliminary assessment has therefore been conducted under the premise that public roads will generally remain open. Where road closures are required, the period of the closure would be kept to a minimum and diversions would be via the most appropriate alternative route. Access to properties would be maintained at all times;
 - The assessment of the significance of effects will be carried out against a benchmark of current human health baseline conditions prevailing around the Project, as far as is possible within the limitations of such a dataset; and
 - Baseline data is also subject to a time lag between collection and publication. As with any dataset, these conditions may be subject to change over time which may influence the findings of the assessment. It is assumed that the data collated is accurate.
- 14.5.3 These key parameters and assumptions will be reviewed based on the design presented in the Development Consent Order (DCO) application and, where required, updated, or refined, for the ES. The ES will present the final key limitations and assumptions used within that assessment, particularly drawing attention to any areas that may have changed from that presented in this preliminary assessment.

- 14.5.4 The Supplementary PEI Report and the June 2025 PEI Report have undertaken all Health and Wellbeing assessments with the information currently available. Updates to the assessments conducted within **Supplementary PEI Report Volume 2 Part C Chapter 7 Health and Wellbeing** and the June 2025 PEI Report will be required at ES stage as other environmental topics will also update their assessments at ES stage.

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Annex A

Developments for Consideration within the Future Baseline

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Annex A Developments for Consideration Within the Future Baseline

A.1 Introduction

- A.1.1 As outlined in **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information** the future baseline section of the environmental assessments will consider any relevant Committed Developments¹ scheduled for completion prior to the commencement of the Project's construction phase within a 10 km radius of the Project.
- A.1.2 A list of the currently known developments to be considered as part of the future baseline section of the environmental assessments is provided in **Table A.1**.
- A.1.3 On a case by case basis, developments where construction is known to have concluded have been included in the list presented in **Table A.1**. These developments have been included on a precautionary basis due to their scale and proximity from the Project. In addition, data sources which have informed the environmental baseline presented in the Supplementary Preliminary Environmental Information (PEI) Report do not always reflect developments which have recently been constructed.
- A.1.4 The Environmental Statement (ES) will provide an updated list of Committed Developments for consideration within the future baseline to reflect any additional planning applications which have progressed since the initial search conducted in December 2024 and updated in August 2025.

¹ The term 'Committed Development' refers to a development identified in the initial long list search which meets the definition of a Tier 1, 2 or 3 development, as outlined in **Supplementary PEI Report Volume 2 Part C Chapter 9 Cumulative Effects**.

Table A.1 Future baseline developments

Planning Application Reference	Description	Section	Consenting Authority	Distance from draft Order Limits	Status
EN010097	VPI Immingham OCGT The construction and operation of a new Open Cycle Gas Turbine ('OCGT') Power Station of up to 299 megawatts ('MW') gross output and associated development including gas and electrical connections.	Section 1	North East Lincolnshire Council	9 km	Construction Started
TR030007	Immingham Eastern Ro-Ro Terminal A new roll-on/roll-off facility comprising a new jetty with three berths, improved hardstanding, Terminal buildings and an internal side bridge to cross over existing port infrastructure.	Section 1	North East Lincolnshire Council	5.7 km	Construction Started
TR010007	A160 - A180 Port of Immingham Improvement Works to the A160 between the junction with the A180 at Brocklesby Interchange and the Port of Immingham. The project would widen the existing single carriageway section of the A160 to dual carriageway, with associated works to junctions along the length of the route.	Section 1	North East Lincolnshire Council	8.7 km	Construction Complete
DM/1156/23/FUL	Bradley Road Solar Farm Construction, operation and decommissioning of a solar photovoltaic farm, a Battery Energy Storage System (BESS) facility, associated connection including a POC mast and substation, temporary construction compound, perimeter fencing, landscaping and associated infrastructure	Section 2	North East Lincolnshire Council	Adjacent to draft Order Limits	Construction completion anticipated 2026

Planning Application Reference	Description	Section	Consenting Authority	Distance from draft Order Limits	Status
S/152/01297/22	Installation of a ground mounted solar photovoltaic (PV) farm with battery storage; along with continued agricultural use, ancillary infrastructure and security fencing, CCTV, landscaping, bunding, ecological enhancements and associated works. Construction of a vehicular access.	Section 4	East Lindsey District Council	1.7 km	Construction Started
H22-1249-21	Residential development for the erection of 150 dwellings and associated open space and infrastructure.	Section 5	South Holland District Council	760 m	Construction Started
19/02003/F	Proposed development of a battery storage installation and associated development to allow for the storage, importation and exportation of energy to the National Grid.	Section 6	Kings Lynn and West Norfolk Borough Council	300 m	Construction Started
22/02021/FM	Erection of a Renewable Battery Energy Storage System and associated infrastructure including access and landscaping.	Section 6	Kings Lynn and West Norfolk Borough Council	40 m	Construction Started
22/00091/FM	Installation of underground cabling and associated electrical infrastructure to connect connected solar development to the Walpole National Grid Substation.	Section 6	Kings Lynn and West Norfolk Borough Council	340 m	Construction Started
21/02443/FM	Proposed Garden Centre, Glass Houses and External Area.	Section 6	Kings Lynn and West Norfolk Borough Council	130 m	Construction Started
22/01616/FM	Installation of a Synchronous Condenser facility with associated infrastructure access and landscaping.	Section 6	Kings Lynn and West Norfolk Borough Council	30 m	Construction Started

Planning Application Reference	Description	Section	Consenting Authority	Distance from draft Order Limits	Status
H16-1327-21	Construction and operation of an unmanned Battery Energy Storage System ('BESS') with a power capacity of up to 550 megawatt ('MW') with associated works including control and protection systems, power conversion systems (and associated transformers), temperature regulation systems, a main step-up transformer(s) and switchgear, welfare facilities, electrical cabling and electrical connection, and other associated works.	Section 6	South Holland District Council	490 m	Construction Started
H13-0190-23	Erection of a ground mounted solar array with associated infrastructure.	Section 6	South Holland District Council	Within draft Order Limits	Construction anticipated 2025
Multiple	<p>Strategic Pipeline Alliance projects</p> <p>The Strategic Pipeline Alliance (SPA) is creating hundreds of kilometres of new, interconnecting pipelines to help combat the impact of climate change and keep fresh, clean water flowing across the Anglian Water region.</p>	Multiple	Multiple	Varies	Various stages of construction
DM/0899/21/FUL	<p>Aura Power Solar Farm</p> <p>Install solar farm with associated works and infrastructure to include ground mounted solar panels, access tracks, inverters, transformers, storage units, substation compound, underground cables and conduits, temporary construction compound, perimeter fencing and planting scheme</p>	Section 1 and Section 2	Multiple	Varies	Construction anticipated 2025

Planning Application Reference	Description	Section	Consenting Authority	Distance from draft Order Limits	Status
H16-1327-21	Construction and operation of an unmanned Battery Energy Storage System ('BESS') with a power capacity of up to 550 megawatt ('MW') with associated works including control and protection systems, power conversion systems (and associated transformers), temperature regulation systems, a main step-up transformer(s) and switchgear, welfare facilities, electrical cabling and electrical connection, and other associated works.	Section 6	South Holland District Council	1.7 km	Construction completion anticipated 2026
DM/0899/21/FUL	Install solar farm with associated works and infrastructure to include ground mounted solar panels, access tracks, inverters, transformers, storage units, substation compound, underground cables and conduits, temporary construction compound, perimeter fencing and planting scheme.	Section 1	North East Lincolnshire Council	0.1 km	Construction completion anticipated 2026
H18-0741-21	Installation of a solar farm and battery storage facility with associated infrastructure	Section 6	South Holland District Council	0.1 km	Construction Started
EN070008	The Viking CCS Pipeline project comprises a new 55 km (approx.) onshore underground pipeline from the point of receipt of dense phase CO2 at Immingham, through its transportation to facilities at TGT, and transportation from TGT through the existing LOGGS pipeline to Mean Low Water Spring (MLWS). Associated infrastructure and ancillary works are anticipated including but not exclusive to required valves,	Section 2	Lincolnshire County Council	0.5 – 1 km	Construction completion anticipated 2027

Planning Application Reference	Description	Section	Consenting Authority	Distance from draft Order Limits	Status
	inspection, monitoring, venting and handling facilities and temporary construction compounds, storage areas and access roads will also form part of the project.				

Annex B

Agriculture and Soils Survey Strategy

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Annex B Agriculture and Soils Survey Strategy

B.1 Purpose of the Strategy

- B.1.1 This strategy reflects that included within the previously published June 2025 Preliminary Environmental Information (PEI) Report (Ref 1) for the Grimsby to Walpole Project (the Project). It is intended to be used during consultation with key stakeholders. The purpose of this document is to confirm a proportionate approach to agriculture and soils field surveys.
- B.1.2 The strategy focuses on gathering sufficient data to support the assessment of impacts on the best and most versatile (BMV) land. An Agricultural Land Classification (ALC) Survey will be undertaken and the results presented in the Environmental Statement (ES) to identify the agricultural land quality and its grade and the extent of BMV land within the Study Area which would be affected, both temporarily and permanently. This will enable the Grimsby to Walpole Project (the Project) to demonstrate a detailed understanding of the extent of BMV land affected temporarily and permanently in response to policy requirements as set out below.
- B.1.3 Paragraphs 5.11.12, 5.11.13 and 5.11.34 of Overarching National Policy Statement for Energy (EN-1) state that:
- “Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5).”;*
- “Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed.”; and*
- “The Secretary of State (SoS) should ensure that applicants do not site their scheme on the best and more versatile agricultural land without justification. Where schemes are to be sited on best and more versatile agricultural land the SoS should take into account the economic and other benefits of that land. Where development of agricultural land is demonstrated to be necessary, areas of poorer quality should be preferred to those of a higher quality’.”*

B.2 Avoidance Measures and Principles for Scoping Out Surveys

- B.2.1 Integrating avoidance measures into the Project design, where possible, has assisted in defining the scope of surveys and the potential requirement for field surveys in any given location. Key to this has been using existing available information on BMV land, alongside other environmental considerations, to inform design development to minimise the extent of land required for both construction and operation.

- B.2.2 In addition, a Preliminary Code of Construction Practice (CoCP) has been prepared to accompany the Supplementary PEI Report and the previously published June 2025 PEI Report (Ref 1). The Preliminary CoCP sets out the high-level commitments for the DCO for the purpose of minimising the risk of impacts on the quality of agricultural land and soil, most importantly during construction. In addition, an outline Soil Management Plan (SMP) will be submitted with the ES (and will be based on the survey data), to set out in detail the measures which would be implemented to minimise the risk of damage to soils and ensure their appropriate reinstatement or re-use.
- B.2.3 However, the survey strategy acknowledges that, even where features are avoided or standard mitigation measures are adopted, there may continue to be a risk of impacts to BMV land and peat soils. Therefore, the avoidance measures alone are not sufficient to rule out some field surveys.
- B.2.4 The general principles for scoping out surveys will be as follows:
- i. Areas where agricultural land will not be disturbed or directly impacted;
 - ii. Areas where there are buried services and medium or high unexploded ordnance (UXO) risks (which would pose a Health and Safety risk to surveyors); however, if the UXO risk is mapped as medium the survey team will coordinate with a specialist UXO survey/assessment team to, where possible, address Health and Safety concerns to enable the survey to be undertaken;
 - iii. Areas where there are other Health and Safety concerns (such as known contamination, fly tipping, known or potential for carcass burial pits or the presence of livestock); and
 - iv. Areas where land access is not granted (all efforts will be made to secure access, including the use of s172 powers where required).

B.3 Stages of Field Survey

- B.3.1 The process of planning field surveys has been broken down into three separate stages which are described below:
- i. Stage 1 – Constraints mapping (baseline information gathering, land access consultation, survey (auger) location planning and Health and Safety documentation);
 - ii. Stage 2 – Detailed surveys; and
 - iii. Stage 3 – Gap filling.
- B.3.2 The strategy should not be viewed as a wholly linear process and where necessary the stages will be adapted to accommodate change to the Project design. This will allow changes, such as route alterations, to be integrated and an appropriate scope developed rapidly in response to this change.

Stage 1 - Constraints Mapping

- B.3.3 Peat, soil and Provisional ALC data will be collated along with any information available from previous ALC surveys (from Natural England) and ALC data from other projects such as EGL 3&4, Viking CCS and Viking Link. This will provide

information to support the development of constraints maps for siting, routeing and preliminary design.

- B.3.4 A survey plan will be prepared to show proposed auger locations along the pylon route and access roads, substations, laydown areas and compounds to ensure the surveys can be demonstrated to be in compliance with industry technical standards.
- B.3.5 The survey plan will take account the Project design development programme (i.e. the extent to which the design identifies the proposed alignment and location of specific aspects of infrastructure) alongside the time required to complete the surveys, seeking to minimise surveying through standing crops and ensuring sufficient information is available to support design decisions. As such, the survey may be completed in a number of phases, focused initially on critical infrastructure locations (to support design development) and sections of route where there is a more advanced design, with other sections picked up in subsequent phases as the design progresses.
- B.3.6 A Risk Assessment and Method Statement (RAMS) will be prepared to ensure surveys are undertaken in compliance with Health and Safety requirements. As part of the RAMS development, any identifiable Health and Safety concerns will be assessed prior to surveys commencing by collating and reviewing available data on UXO, utilities, contamination etc. and requesting available information from National Grid Electricity Transmission plc (National Grid) (for example a Risk Register if available). The RAMS will remain a live document and the team will be agile to new risks being identified (including risks identified by other survey teams) and the RAMS updated accordingly.
- B.3.7 Access for surveys will be confirmed with landowners and details of the survey approach shared. Any access requirements will be taken into account when planning actual survey days/locations.

Stage 2 - Detailed Surveys

- B.3.8 The surveys will be undertaken in accordance with the ALC guidelines and all Health and Safety requirements.
- B.3.9 The survey will collate soil data at each location from which the ALC grade at each point can be calculated and the soil type defined.
- B.3.10 Soil profile pits will also be dug by hand within each identified soil type to provide more information on soil structure and stone content.
- B.3.11 The survey point data will then be used to map areas of each grade and soil type across the survey area. An ALC report will be produced setting out all the information gathered and the extent of each grade.

Stage 3 – Gap filling

- B.3.12 There is the potential for access limitations, design changes etc. to result in some land parcels not being surveyed. Where possible, surveys will be conducted across these areas with the aim of having all areas within the draft Order Limits (as defined in the design submitted with the development consent application) surveyed.
- B.3.13 The data will be collated, ALC grades calculated, and soil types identified, and the ALC report will be updated.

References

- Ref 1 National Grid (2025). Grimsby to Walpole Preliminary Environmental Information Report. Available at: <https://www.nationalgrid.com/the-great-grid-upgrade/grimsby-to-walpole/document-library#4257225834-3023854277> [Accessed 14 October 2025].

4C. Cumulative Effects Assessment Methodology

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4C. Cumulative Effects Assessment Methodology

4C.1 Introduction

- 4C.1.1 This appendix provides the cumulative effects assessment methodology for the Project and should be read in conjunction with **Supplementary PEI Report Volume 2 Part A Chapter 4 Approach to Preliminary Environmental Information**. This appendix reflects that included within the previously published Preliminary Environmental Information (PEI) Report (Ref 1) for the Grimsby to Walpole Project (the Project), with minor updates made to reflect the updated assessments specifically relating to Section 5 of the Project: New Weston Marsh Substations A and B.
- 4C.1.2 Cumulative effects are the result of multiple actions on environmental receptors or resources. The cumulative effects assessment of the Project will consider the following types of effect:
- i. Intra-project cumulative effects (sometimes referred to as combined or interactive effects): these effects occur where a single receptor is affected by more than one source of effect from the Project.
 - ii. Inter-project cumulative effects: these effects occur where a single receptor is affected by effects from a number of developments, including the Project. This includes effects which individually might not be of significance, but when considered together could create a significant cumulative effect on a shared receptor when considered together with the Project.

4C.2 Intra-project cumulative effects assessment methodology

- 4C.2.1 There is no established Environmental Impact Assessment (EIA) methodology for assessing and quantifying the effects of a number of individual impacts on the same receptors. The following section outlines the intra-project cumulative effects methodology for this Supplementary Preliminary Environmental Information (PEI) Report and the likely intra-project cumulative effects methodology which will be used for the Environmental Statement (ES).
- 4C.2.2 The assessment of intra-project cumulative effects adopt a three-stage approach:
- i. a pre-screening exercise to determine whether a receptor is exposed to more than one type of effect. Those receptors identified as experiencing more than one type of effect will be taken through to the second stage;
 - ii. a screening exercise to identify the level of effect on each receptor. Those receptors exposed to two or more types of effect, with a level of effect greater than negligible, will be taken forward to the third stage; and
 - iii. the main intra-project assessment which will consider if the combination of effects is likely to lead to overall effects of greater significance.

- 4C.2.3 As this Supplementary PEI Report is presenting a preliminary assessment and some of the topics have not been able to confirm the level of effect, an assessment of intra–project cumulative effects is not presented in **Supplementary PEI Report Volume 2 Part C Chapter 9 Cumulative Effects**. This is because it is not possible to progress the intra-project cumulative assessment past the first stage of the previously described assessment approach. A full assessment of intra–project cumulative effects will, however, be presented in the ES.
- 4C.2.4 Therefore this Supplementary PEI Report provides an initial pre-screening assessment within **Supplementary PEI Report Volume 2 Part C Chapter 9 Cumulative Effects** to identify receptor groups that are potentially exposed to more than one type of effect from multiple environmental topics. This assessment has been undertaken based upon currently available data relating to both the construction and operation (and maintenance) phases of the Project.
- 4C.2.5 It should be noted that the assessment is preliminary in nature and is based on the initial findings set out within the environmental topic chapters detailed within **Supplementary PEI Report Volume 2 Part B and Part C**, and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 and Part C (Ref 1).
- 4C.2.6 Some environmental topics have an established assessment methodology that is inherently cumulative in the way they undertake their assessment of likely significant effects. To avoid double counting of effect at the ES stage, where topics report cumulative significant effects, the intra-project cumulative assessment will not report those effects. However for the purpose of the pre-screening exercise linkages have been identified within this Supplementary PEI Report. The environmental topics that fall into this category include:
- i. **Supplementary PEI Report Volume 2 Part C Chapter 7 Health and Wellbeing**; and
 - ii. **Supplementary PEI Report Volume 2 Part C Chapter 8 Climate Change**.
- 4C.2.7 Any potential additional mitigation measures and monitoring requirements as a result of the intra-project cumulative effects assessment will be considered and outlined within the ES.

4C.3 Inter-project cumulative effects

- 4C.3.1 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 could create a significant cumulative effect.
- 4C.3.2 In accordance with the approach contained within the Planning Inspectorate’s Advice on Cumulative Effects Assessment (Ref 2), the approach to the assessment of inter-project cumulative effects would follow a staged approach. The following section outlines the approach that has been adopted for this Supplementary PEI Report, which will also be followed for the ES.
- 4C.3.3 The approach for the Project involves identifying a long list of other existing development and/or approved developments that that could interact with the Project within the identified Zones of Influence (ZoI) (Stage 1A and 1B). Following this at Stage 2 the identified developments are screened against spatial and temporal thresholds to see if they should progress to Stage 3. This is referred to as a ‘shortlist’

of developments for consideration. Environmental information is then gathered for each of the shortlisted developments at Stage 3, and these developments are assessed to identify whether there are likely significant effects with the Project (Stage 4). These stages are explained in more detail below.

- 4C.3.4 Stages 1A, 1B and 2 have been completed for this Supplementary PEI Report. Stages 3 and 4 will be undertaken and presented in the cumulative effects chapter of the ES. In addition, as part of the Supplementary PEI Report, a preliminary assessment has been undertaken to provide stakeholders with additional information regarding the environmental topics with the potential to experience likely significant cumulative effects as a result of a Committed Development.

Stage 1a: Identify Zone of Influence

- 4C.3.5 The Study Area for inter-project cumulative effects comprises of multiple Zol. The Zol is the geographic area within which a development is likely to affect environmental receptors. As such, the Zol would vary for different types of receptors. The Zol used for this Supplementary PEI Report is based on a distance extending from either side of the draft Order Limits.
- 4C.3.6 The Zol used for environmental topics are listed in **Table 4C.1**. The rationale for the distances chosen are summarised below and explained in the relevant topic chapters.

Table 4C.1 Zol for environmental topics

Environmental Topic	Study Areas	Rationale
Landscape and visual	10 km	The Study Area is regarded as the industry leading standard for the assessment of cumulative effects as significant effects beyond this is unlikely.
Ecology and biodiversity	10 km*	The Study Area is regarded as the industry leading standard for the assessment of cumulative effects as significant effects beyond this is unlikely.
Historic environment	5 km	The 5 km Study Area enables potential visual impacts to the setting and significance of designated heritage assets of the highest value (scheduled monuments, grade I and II* listed buildings and grade I and II* registered parks and gardens) arising from the Project and potential cumulative effects from other developments. This also encompasses the 3 km study area for all designated heritage assets.
Water environment	500 m	The Study Area is regarded as the industry leading standard for the assessment of cumulative effects as significant effects beyond this is unlikely.
Geology and hydrogeology	<500 m	A Study Area of 250 m for geological receptors and 500 m for hydrogeological receptors (due to their high sensitivity and connectivity across a wider area) as significant cumulative effects beyond these

Environmental Topic	Study Areas	Rationale
		distances are unlikely due to the nature of the Project.
Agriculture and soils	500 m	The Study Area has been defined as the impacts from the Project will be limited to areas of direct land take or land disturbance.
Traffic and movement	Not applicable	The assessment undertaken will be inherently cumulative in nature as the traffic and transport modelling utilises an uplift in data to account for future growth and also includes the traffic data of committed developments in the local area, as agreed with the local planning authorities. To avoid the double counting of effects Traffic and Movement is excluded from the inter-project cumulative effects assessment.
Air quality	250 m	The Study Area is based on Institute of Air Quality Management guidance document regarding the assessment of dust from demolition and construction (Ref 3)
Noise and Vibration – construction	300 m	The Study Area is based on guidance from BS 5228 for calculation validity. Significant effects only expected at shorter distance.
Noise and Vibration – operation	1 km	The Study Area is based on guidance from ISO 9613 for calculation validity. Significant effects only expected at shorter distance.
Socio-economics, recreation and tourism – local businesses, development land, community facilities, open space and users of Public Rights of Way and promoted recreational routes	500 m	The Study Area is based on relevant industry guidance, best practice and stakeholder engagement.
Socio-economics, recreation and tourism - strategic tourism receptors.	5 km	The Study Area is based on relevant industry guidance, best practice and stakeholder engagement.
Health and wellbeing	500 m	The Study Area is regarded as the industry leading standard for the assessment of cumulative effects as significant effects beyond this is unlikely.
Climate change	Not applicable	The In-Combination Climate Change Impact Assessment has been undertaken as part of the technical assessments for each Section and route-wide assessment.

Environmental Topic	Study Areas	Rationale
<p>*the 10 km Study Area encompasses statutory designated sites of international, national and local nature conservation value, and non-designated sites of local nature conservation value. A wider 30 km Study Area is identified in the Ecology and Biodiversity assessment for the identification of any Special Areas of Conservation or Special Protection Areas where (respectively) bats or bird species with large foraging ranges are noted as, or one of, the qualifying features.</p>		

4C.3.7 The Zol is illustrated on **Supplementary PEI Report Volume 2 Part C Figure 9.1 Zones of Influence for Cumulative Effects Assessment**. This will be kept under review as the Project develops and the long list of developments for consideration is updated as required during the production of the ES.

Stage 1b: Identify long list of other developments

4C.3.8 For the inter-project assessment, a long list of other developments to be considered in the cumulative effects assessment has been prepared. The Planning Inspectorate’s Advice on Cumulative Effects Assessment (Ref 2) identifies three tiers of development based on where they are in the planning process and recognises that the amount of information available to inform the assessment varies according to which tier it fits in to. Tier 1 projects are the most certain, with a high level of publicly available information, while Tier 3 projects are the least certain, with limited publicly available information to inform assessments. The three tiers are described in **Table 4C.2**.

4C.3.9 Minor planning applications have been identified and considered as part of the long list exercise when in a close enough proximity to the Project. Professional judgement has been used to determine if the scale and proximity of a Committed Development has the potential to cause cumulative interactions with the Project.

4C.3.10 An initial search of planning applications held on the relevant planning authority websites and the Planning Inspectorate’s Programme of Projects was undertaken in December 2024 and updated in August 2025 for the purpose of this Supplementary PEI Report. From this, a provisional long list of developments is provided in **Supplementary PEI Report Volume 3 Part C Appendix 9A Cumulative Effects Assessment Long List of Committed Developments**. The long list will be updated periodically through an ongoing planning search to consider any new planning applications, or applications for development consent made since the undertaking of the initial scoping exercise.

4C.3.11 It should be noted that the long list will continue to change throughout the preparation of the ES as new planning applications or applications for development consent are submitted, approved, rejected, or withdrawn. Additional developments will be added to the long list for the ES as they are submitted to planning portals, with an intended cut-off date six months before the Project’s application being submitted to enable the assessment to be concluded.

Table 4C.2 'Other development' for inclusion in the inter-project cumulative effects assessment

Tier	Development
Tier 1	Under construction, where the project is classified as 'major development', whether under the Planning Act 2008 (PA2008) (Ref 4) or other consent regimes.
	Permitted application(s), where the project is classified as 'major development,' whether under the PA2008 (Ref 4) or other consent regimes, but not yet implemented.
	Submitted application(s), where the project is classified as 'major development,' whether under the PA2008 (Ref 4) or other consent regimes, but not yet determined.
Tier 2	Projects on the Planning Inspectorate's Program of Projects (publicly available), and/or the relevant local planning authorities planning portal where the project is classified as 'major development' and a scoping or screening report has been submitted.
Tier 3	Projects on the Planning Inspectorate's Programme of Projects (publicly available), and/or the subject of pre-application discussion with a relevant local planning authority, where a scoping or screening report has not been submitted. Projects registered on the local planning authority's portal classed as major development but do not require EIA.
	Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that the amount of information on any relevant proposals will be limited.
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward. For example both the Transmission Entry Capacity (TEC) Register and the transitional Centralised Strategy Network Plan will be consulted to gather a list of existing and future connections to the Project and to identify any electrical network infrastructure reinforcements.

Stage 2: Establishing a shortlist of 'other existing development and/or approved development'

- 4C.3.12 Following Stage 1, the projects included on the long list have been screened based on the scale and nature of the Committed Development, and the potential for interactions with the Project across all environmental topics. This has taken into consideration the Zol of each environmental topic in order to create a shortlist of development for consideration.
- 4C.3.13 Professional judgement has been used during the assessment to determine whether developments should be scoped in or out of the assessment. A justification for scoping a development in or out of the shortlist has been provided in **Supplementary PEI Report Volume 3 Part C Appendix 9A Cumulative Effects Assessment Long List of Committed Developments**.

- 4C.3.14 **Supplementary PEI Report Volume 3 Part C Appendix 9B Cumulative Effects Assessment Shortlist of Committed Developments** contains the shortlist of Committed Developments which will be considered in the ES.
- 4C.3.15 The following inclusion/exclusion criteria will be used for the assessment:
- i. **Temporal Scope:** other projects with an overlapping construction phase (currently expected to be 2029-2033 and in some cases operational effects would be scoped into the assessment. Planning applications considered include those submitted within a five year period prior to the submission of the DCO application for this Project. This is because planning permissions typically expire after a period of three to five years without implementation. The status of planning applications will be monitored to include committed projects and those applications that remain undetermined but could still provide forthcoming committed developments.
 - ii. **Scale and nature of development:** development identified as Schedule 1 and 2 developments in the Environmental Impact Assessment (EIA) Regulations (Ref 5) would be considered further. Development not identified as Schedule 1 or 2 developments would be scoped out of the assessment, except where professional judgement identifies specific scenarios where there is a high likelihood of significant environmental effects arising in combination with the Project.
 - iii. **Sensitivity of the receiving environment:** where there are potential source-pathway-receptor linkages between the Project and other development, cumulative effects would be considered further. Other development with no clear source- pathway-receptor linkage would be scoped out of the assessment.
 - iv. **Consultation:** requests from relevant stakeholders for the inclusion of specific projects and/or plans within the cumulative effects assessment.

Stage 3: Information gathering

- 4C.3.16 Stage 3 will be completed and presented as part of the ES. Further information on the shortlisted developments will be gathered to inform the final cumulative effects assessment, where this is available. This will include:
- i. proposed design and location information;
 - ii. construction and operational timescales; and
 - iii. results of any environmental assessments completed for the other developments.
- 4C.3.17 Project data will be gathered and obtained from local planning authority planning portals, the Planning Inspectorate's website, discussion with other developers and engagement with local planning authorities.

Stage 4: Assessment

- 4C.3.18 At the ES stage an assessment of the cumulative effects of the Project with the 'other existing development and/or approved development' identified in Stage 2 will be undertaken using the following methodology:

- i. Each of the 'other existing developments and/or approved development' will be assessed in turn with the Project to determine if both activities/proposals give rise to significant cumulative effects during either construction or operation;
- ii. The assessment will consider the apportionment of effect between the Project and the 'other existing development' - e.g. is the contribution to the effect demonstrably related to one development or is there an equal contribution from either development based on professional judgement;
- iii. The assessment will consider whether certain assessments (e.g. transport and associated air quality/noise vehicular emissions assessments) are inherently cumulative and have been undertaken on a worse-case basis. In such circumstances no additional cumulative assessment will be undertaken;
- iv. Cumulative effects will be identified by considering whether:
 - there would be any change in the significant effects from the Project, as identified within the individual topic chapters of the Supplementary PEI Report and ES, taking into consideration any effects from the shortlisted 'other existing development and/or approved development'. For example, a moderate adverse significant effect becoming a major adverse significant effect; or where the effects of the Project on key receptors potentially affected by the shortlisted 'other existing development and/or approved development' would trigger a significant effect where the effects of the Project in isolation would be non-significant. For example, a minor adverse non-significant effect becoming a moderate adverse significant effect;
- v. Significant and non-significant effects of the Project will be taken from the environmental topic chapters to inform the significance of cumulative effects with other developments. Effects will be identified as direct, indirect, short-term or long-term, permanent or temporary; and
- vi. All likely significant cumulative effects and a description of the proposed mitigation and monitoring measures that may be required will be documented and presented in an accessible format similar to that in Matrix 2 provided in Appendix 2 of Advice Note Seventeen (Ref 2) and tabulated within the ES.

4C.3.19 As previously noted, only Stages 1A, 1B and 2 have been completed for this Supplementary PEI Report. Stages 3 and 4 will be undertaken as part of the EIA once assessments are complete and presented in the cumulative effects chapter of the ES.

4C.4 Assumptions and limitations

4C.4.1 As the Supplementary PEI Report is a preliminary assessment and utilises baseline information available at the time of writing, it is possible that the effects reported within the ES may differ to those set out in this Supplementary PEI Report. This could occur where new information becomes available and identifies new receptors or where further assessment is undertaken on an updated design. The cumulative assessment assumes that mitigation identified within the preceding chapters and/or within the EIAs of other proposed developments is included before undertaking the assessment.

- 4C.4.2 The assumptions and limitations of the cumulative effects assessment in regard to both intra-project and inter-project cumulative effects will be reviewed and updated as part of the ES.
- 4C.4.3 The following assumptions and limitations apply to the intra-project and inter-project cumulative effects assessments respectively:

Intra-Project Assessment

- i. Negligible effects identified in topic assessments are assumed to have no ability to interact with another identified effect and will be excluded from consideration.

Inter-Project Assessment

- ii. It has been considered reasonably likely that developments which have been granted permission before 2020 will have been completed before the commencement of construction works for the Project. Any developments which fall within this category have been considered unlikely to give rise to cumulative effects during construction, and operational effects would already form part of the baseline/future baseline environment.
- iii. For the purposes of the cumulative effects assessment presented in **Supplementary PEI Report Volume 2 Part C Chapter 9 Cumulative Effects** a long list and shortlist have been prepared. During this initial search, developments where construction has already commenced or where the development is likely to be completed prior to the Project's indicative construction start date have not been included in the long list. These developments will be considered as part of the future baseline of each individual topic assessment within the ES. **Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope Annex A Developments for Consideration Within the Future Baseline** presents a list of developments to be considered as part of the future baseline of each individual topic assessment. This will be conducted as part of the ES.
- iv. The assessment has been conducted utilising information only available within the public domain, such as the Planning Inspectorate's website or Local Planning Authority planning portals.

References

- Ref 1 National Grid (2025) Grimsby to Walpole Preliminary Environmental Information Report [online] Available at: <https://www.nationalgrid.com/the-great-grid-upgrade/grimsby-to-walpole/document-library#4257225834-3023854277> [Accessed 14 October 2025]
- Ref 2 Planning Inspectorate (2019). Advice on Cumulative Effects Assessment. [online] Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment> [Accessed 28 March 2025].
- Ref 3 Institute of Air Quality Management (2024) [online] Guidance on the assessment of dust from demolition and construction (Version 2.2). Available at: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf> [Accessed 20 November 2024]
- Ref 4 Planning Act 2008 [online]. Available at: <https://www.legislation.gov.uk/ukpga/2008/29/contents> [Accessed 08 July 2024].
- Ref 5 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 [online]. Available at: <https://www.legislation.gov.uk/uksi/2017/572/contents/made> [Accessed 06 September 2024].

4D. Summary of Stakeholder Engagement

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4D. Summary of Stakeholder Engagement

4D.1 Introduction

- 4D.1.1 This appendix includes a record of key stakeholder engagement completed during the production of the June 2025 Preliminary Environmental Information (PEI) Report (Ref 1) and this Supplementary PEI Report in relation to the Project. This is not an exhaustive list of all engagement undertaken by National Grid in relation to the Project, rather it includes key technical engagement that has influenced and helped to develop the June 2025 PEI Report, the Supplementary PEI Report and the proposed approach to the Environmental Statement (ES) and supporting documents.
- 4D.1.2 This appendix was originally published within the June 2025 PEI Report, which formed part of the Stage 2 Consultation completed between 11 June and 6 August 2025. Since the launch of the Stage 2 consultation, further design development has been completed for Section 5 of the Grimsby to Walpole Project (the Project). This has confirmed the requirement for two substations within Section 5, the preferred locations of the new Weston Marsh Substation A and Weston Marsh Substation B and the associated overhead line and underground cable connections. The draft Order Limits for Section 5 have also now been defined, whereas the June 2025 PEI Report was based upon a wider 'Refined Weston Marsh Substation Siting Zone' which covered a greater total area than the draft Order Limits.
- 4D.1.3 This Supplementary PEI Report has therefore been produced to support the Weston Marsh Targeted Consultation specifically relating to proposed works within Section 5 Weston Marsh Substations A and B. This is to ensure that consultees are provided with fuller details of the potential likely significant effects of Section 5 than those presented during the Stage 2 consultation, such that they are able to prepare well-informed responses to the Targeted Consultation.
- 4D.1.4 Where information contained within the June 2025 PEI Report is relevant to the updated preliminary assessment of proposed works within Section 5, it is repeated within this Supplementary PEI Report to aid understanding. As such, this Appendix is again included, but provides updates where additional key stakeholder engagement has been completed since publication of the June 2025 PEI Report.
- 4D.1.5 A summary of the discussions undertaken to date, including some of the key issues raised by technical stakeholders, and where these issues have been considered in the June 2025 PEI Report and/or the Supplementary PEI Report, is included in **Table 4D.1** Table 4D.1. It is noted that some of these discussions are part of a wider programme of regular Project update meetings with key stakeholders. Where technical stakeholder engagement has been completed since publication of the June 2025 PEI Report it is summarised below for completeness. However, it is noted that the Weston Marsh Targeted Consultation is specifically focused on works within Section 5 only. Therefore where technical stakeholder engagement undertaken since June 2025 is relevant to other sections of the Project, it will inform the updated assessments reported within the ES.

Table 4D.1 Summary of technical stakeholder engagement

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
Landscape and Visual			
Natural England, and Lincolnshire Wolds Countryside Service	March 2024	Meeting to discuss the landscape and visual aspects relating to the Lincolnshire Wolds National Landscape (Area of Outstanding National Beauty (AONB)) and its setting. Concerns were raised by Lincolnshire Wolds Countryside Service regarding the scale of the Project and its potential impacts on the National Landscape. Concerns were also raised by Lincolnshire Wolds Countryside Service with respect to the potential cumulative effects of the Project and other development projects.	A preliminary appraisal of the effects of the Project on the Lincolnshire Wolds National Landscape (AONB) is presented in the June 2025 PEI Report Volume 2 Part C Route-wide Chapter 2 Landscape (Ref 1). Visual effects on receptors within the National Landscape (AONB) are presented in the June 2025 PEI Report Volume 2 Part B Sections 1 to 4 Chapter 3 Visual (Ref 1). Supplementary PEI Report Volume 2 Part C Route-wide Chapter 9 Cumulative Effects presents a short-list of the committed developments which have been identified within the Study Area with which there may be potential for cumulative landscape and visual effects. The full cumulative effects assessment will be reported within the Environmental Statement (ES).
Landscape and Visual Technical Working Group (Meeting 1): Natural England, National Trust, Lincolnshire County Council, Lincolnshire Wolds Countryside Service, North East Lincolnshire Council, South and East Lincs Partnership, Cambridgeshire County Council, Fenland District Council, Norfolk County Council, King's Lynn and West Norfolk Council	November 2024	National Grid presented a Project update and a draft viewpoint selection document and requested comments on the selection before 20 December 2024.	Feedback received on viewpoint locations via the Working Group to date, has been reviewed and incorporated into Supplementary PEI Report Volume 3 Part B Appendix 3A Proposed Viewpoints .
Lincolnshire Wolds Countryside Service	November 2024	Concerns were raised regarding the Project’s potential impacts upon the River Lud and Louth Canal, given aspirations for these watercourses to become navigable, and the potential safety concerns with fishing.	The Project will engage with relevant stakeholders, including the Louth Navigation Trust, in terms of interaction with the River Lud and the Louth Canal. These meetings will be recorded and summarised within the ES.
Lincolnshire Wolds Countryside Service	November 2024	Lincolnshire Wolds Countryside Service requested a document summarising the feedback from the pre-non-statutory consultation phase.	Non-statutory (Stage 1) consultation feedback is presented in the Stage 1 Consultation Feedback Report (Ref 2) published in support of the Stage 2 consultation.
Natural England	November 2024	Natural England requested justification for the 5 km buffer (Study Area) and whether cumulative effects were being considered.	The Study Area is further explained in the landscape and visual methodology provided in Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope . Supplementary PEI Report Volume 2 Part C Route-wide Chapter 9 Cumulative Effects provides further details of the cumulative effects assessment Study Area and presents an updated short-list of the committed developments which have been identified within the Study Area with which there may be potential for cumulative landscape and visual effects. The full cumulative effects assessment will be reported within the ES.

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
Landscape & Visual Technical Working Group (Meeting 2) Cambridgeshire County Council, Lincolnshire County Council, Lincolnshire Wolds National Landscape Board, National Trust, Natural England, Norfolk County Council, North East Lincolnshire Council	May 2025	The meeting provided a briefing on the refined overhead line alignment and draft Order Limits for Stage 2 consultation, updated viewpoint locations to 196 (following feedback), reviewed confidential plans, and outlined mitigation measures such as low-height pylons, planting for screening and ecological protections.	<p>The Section 5 ‘Refined Weston Marsh Substation Siting Zone’ presented at Stage 2 consultation has now been refined and the Section 5 draft Order Limits confirmed. These are presented on Supplementary PEI Report Volume 2 Part B Figure 1.1 Draft Order Limits and the updated Landscape and Visual assessments of Section 5 are reported within Supplementary PEI Report Volume 2 Part B Chapter 2 Landscape and Chapter 3 Visual.</p> <p>The PEI for all other sections of the route is as presented within the June 2025 PEI Report published in support of the Stage 2 consultation.</p>
National Trust and National Grid Quarterly Update National Trust	May 2025	The meeting provided a briefing on the refined alignment and draft Order Limits as the basis for Stage 2 consultation, alongside updated viewpoint locations, including new ones near National Trust sites and within the AONB. Mitigation measures discussed included low-height pylons, planting for screening and ecological benefits, and habitat provisions for protected species. An action was agreed for Gillespies to provide clearer imagery from Tattershall Castle to assess its inclusion in the Landscape and Visual Impact Assessment (LVIA).	<p>The Section 5 ‘Refined Weston Marsh Substation Siting Zone’ presented at Stage 2 consultation has now been refined and the Section 5 draft Order Limits confirmed. These are presented on Supplementary PEI Report Volume 2 Part B Figure 1.1 Draft Order Limits and the updated Landscape and Visual assessments of Section 5 are reported within Supplementary PEI Report Volume 2 Part B Chapter 2 Landscape and Chapter 3 Visual.</p> <p>Feedback received on viewpoint locations within the Section 5 Study Area has been reviewed and incorporated into Supplementary PEI Report Volume 3 Part B Appendix 3A Proposed Viewpoints.</p> <p>Viewpoints for all other sections of the Project were presented within the June 2025 PEI Report Volume 3 Part B Appendix 3A Proposed Viewpoints (Ref 1). Photography at Tattershall still to be undertaken for consideration in the LVIA prepared to inform the ES.</p>
National Trust and National Grid Quarterly Update National Trust	October 2025	Meeting to discuss Stage 2 consultation response pertaining to Ecology, Traffic & Transport and Visual.	<p>Proposed viewpoint locations for Section 5 of the Project are identified in Supplementary PEI Report Volume 3 Part B Appendix 3A Proposed Viewpoints. However, the Supplementary PEI Report does not fully reflect feedback provided in October 2025 given the timing of these discussions.</p> <p>Viewpoints for all other sections of the Project were presented within the June 2025 PEI Report Volume 3 Part B Appendix 3A Proposed Viewpoints (Ref 1).</p> <p>The most recent feedback received on viewpoint locations will be taken into account during development of the ES.</p>
Ecology and Biodiversity			
Natural England	September 2024	Meeting with Natural England to discuss proposed survey strategy for winter 2024 to 2025.	<p>The scope of surveys to date and the initial results within the Section 5 Survey Area are presented within the Supplementary PEI Report Volume 2 Part B Chapter 4 Ecology and Biodiversity and Supplementary PEI Report Volume 3 Part B Appendix 4A Bird Survey Data 2022-2024.</p> <p>For all other sections of the route, the scope of surveys to date and the initial results are presented within the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 4 Ecology and Biodiversity (Ref 1) and the supporting June 2025 PEI Report Volume 3 Part B 4A appendices.</p> <p>The results of completed surveys for all sections of the Project will be reported within the ES.</p> <p>Reference may also be made to Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment</p>

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
			Methodologies and Scope for further details of the approach to surveys.
Royal Society for the Protection of Birds (RSPB)	October 2024	Meeting with the RSPB to provide an update on bird surveys undertaken to date and to discuss further bird surveys that will be undertaken.	<p>The scope of surveys to date and the initial results within the Section 5 Survey Area are presented within the Supplementary PEI Report Volume 2 Part B Chapter 4 Ecology and Biodiversity and Supplementary PEI Report Volume 3 Part B Appendix 4A Bird Survey Data 2022-2024.</p> <p>For all other sections of the route, the scope of surveys to date and the initial results are presented within the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 4 Ecology and Biodiversity (Ref 1) and the supporting June 2025 PEI Report Volume 3 Part B 4A appendices (Ref 1).</p> <p>The results of completed surveys for all sections of the Project will be reported within the ES.</p> <p>Reference may also be made to Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope for further details of the approach to surveys.</p>
Lincolnshire County Council	December 2024	Meeting with Lincolnshire County Council to discuss how biodiversity net gain (BNG) is being factored into the Project.	<p>A summary of the Project's approach to BNG is presented within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description. This reflects the approach summarised within the June 2025 PEI Report.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project's strategy for achieving BNG.</p>
Lincolnshire Chalk Stream Project	January and July 2025	Meeting with Lincolnshire Chalk Stream Project to discuss potential BNG opportunities for chalk stream restoration. The Trust raised concerns about sedimentation and water quality during the construction phase. In areas such as Laceby and Waithe, the degradation of ponds and blow wells due to agricultural pressures was discussed. It was noted the challenges faced by local conservation groups, including the return of management responsibilities to local authorities. However, the potential for restoration projects in these areas remains strong, particularly where blow wells and chalk stream features are still viable.	<p>Standard control mitigation measures to prevent pollution to watercourses during construction of the Project are detailed in Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice (CoCP).</p> <p>Potential additional mitigation measures are in the early stages of development, based upon an iterative process informed by ongoing survey, assessment and engagement. Therefore, details of chalk stream restoration are not included in the June 2025 PEI Report or Supplementary PEI Report. Where mitigation is required, further details will be reported in the ES.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project's strategy for achieving BNG.</p>
Lincolnshire Wildlife Trust	July 2024	<p>Meeting with the Lincolnshire Wildlife Trust to introduce the Project, why the Project is needed as well as to discuss how BNG is being factored into the Project.</p> <p>Meeting also discussed the proposals for Eastern Green Link (EGL) 3 and EGL 4.</p>	<p>A summary of the Project's approach to BNG is presented within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project's strategy for achieving BNG.</p>
Norfolk Wildlife Trust	March 2025	<p>Meeting with Norfolk Wildlife Trust to introduce the Project.</p> <p>Concerns were raised regarding potential collision risks with birds and potential for direct habitat loss.</p> <p>Discussion was also had on the Project's approach to BNG.</p>	Potential collision risks to birds caused by the overhead line have been taken into consideration under the Holford Rules.

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
			<p>The potential effects of the Project on birds within the Section 5 Study Area are presented within Supplementary PEI Report Volume 2 Part B Chapter 4 Ecology and Biodiversity.</p> <p>For all other sections of the route, the potential effects of the Project on birds were discussed in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 4 Ecology and Biodiversity (Ref 1).</p> <p>Bird surveys are ongoing and findings will inform a full assessment of likely effects upon birds reported within the ES and the Report to inform HRA.</p> <p>A summary of the Project’s approach to BNG is presented within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description. This reflects the approach summarised within the June 2025 PEI Report.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project’s strategy for achieving BNG.</p>
Woodland Trust	September 2024	<p>Meeting with the Woodland Trust to introduce the Project.</p> <p>Concerns were raised regarding the potential impacts of the Project upon ancient woodland and veteran trees.</p>	<p>The Project aims to avoid all ancient woodland. Arboricultural surveys are being undertaken in 2025 and 2026 and the results will be presented in the ES.</p>
Ecology and BNG Technical Working Group: Cambridgeshire County Council, Environment Agency (EA), Greater Lincolnshire Nature Partnership, Lincolnshire County Council, Lincolnshire Wildlife Trust, Natural England, Norfolk County Council, RSPB, and Woodland Trust	January 2025	<p>Meeting with the Technical Working Group to discuss the approach to the Ecology and Biodiversity assessment, survey strategy, and how BNG is being factored into the Project.</p>	<p>The Ecology and Biodiversity methodology, including the approach to surveys, is presented within the Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope.</p> <p>A summary of the Project’s approach to BNG is presented within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description.</p> <p>Both of these documents reflect the approaches presented within the June 2025 PEI Report.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project’s strategy for achieving BNG.</p>
Lincolnshire Dormouse Group	October and November 2024	<p>An enquiry as to whether dormice are being affected by the Project.</p>	<p>The Project has scoped out dormice as it is highly unlikely that this species would be affected by the Project.</p>
Norfolk Wildlife Trust - National Grid Grimsby to Walpole and Eastern Green Link 3&4 - Biodiversity Net Gain	April 2025	<p>The meeting covered updates on the Project and EGL3/4 projects, including timelines, PEI Report/DCO progress, and early-stage BNG strategies.</p> <p>Both the Grimsby to Walpole Project and EGL 3/4 are aiming for 10 per cent BNG, mainly through offsite opportunities and partnerships, while avoiding the assumption that land used for construction has long-term habitat value.</p>	<p>A summary of the Project’s approach to BNG is presented within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description. This reflects the approach summarised within the June 2025 PEI Report.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project’s strategy for achieving BNG.</p>
Biodiversity Net Gain Lincolnshire Wildlife Trust	May 2025	<p>The meeting covered National Grid’s major Lincolnshire projects (the Grimsby to Walpole Project, Eastern Green Link (EGL) 3/4 and North Humber to High Marnham (NHHM)), their BNG needs, and potential collaboration with Lincolnshire Wildlife Trust (LWT) and Green Investment in Greater Lincolnshire (GIGL) to deliver measures.</p>	<p>A summary of the Project’s approach to BNG is presented within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description. This reflects the approach presented within the June 2025 PEI Report.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project’s strategy for achieving BNG.</p>

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
East Mercia Rivers Trust (EMRT)	June 2025	EMRT encouraged National Grid to explore BNG partnership opportunities with Rivers Trusts and landowners and to look into water credits and citizen science for future BNG planning. The Trust asked whether BNG opportunities had been specifically explored for Laceby and Waithe Becks, which are both chalk streams.	<p>Standard control mitigation measures to prevent pollution to watercourses during construction of the Project are detailed in Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice (CoCP).</p> <p>Potential additional mitigation measures are in the early stages of development, based upon an iterative process informed by ongoing survey, assessment and engagement. Therefore, details of chalk stream restoration are not included in the June 2025 PEI Report or Supplementary PEI Report. Where mitigation is required, further details will be reported in the ES.</p> <p>A summary of the Project’s approach to BNG is presented within Supplementary PEI Report Volume 2 Part A Chapter 5 Project Description. This reflects the approach summarised within the June 2025 PEI Report.</p> <p>A BNG Report will be provided to support the final submission of the DCO application, which will include further detail of the Project’s strategy for achieving BNG.</p>
Historic Environment			
Historic England	February 2024	Meeting with Historic England to discuss the approach to the Historic Environment assessment and the survey strategy. Key points raised included the need to consider assets at longer distances from the Project, areas of high paleoenvironmental potential, the need to evaluate 'blank' area' during field survey and recommended Historic England guidance documents.	<p>The Historic Environment methodology is presented within the Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope. This reflects the approach presented within the June 2025 PEI Report.</p>
Historic England	March 2024	Email correspondence providing further advice identifying heritage assets that require consideration within the environmental impact assessment for the Project.	<p>Heritage assets potentially affected by Section 5 of the Project are considered within Supplementary PEI Report Volume 2 Part B Chapter 5 Historic Environment.</p> <p>Heritage assets potentially affected by works within all other sections of the Project were identified within the June PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 5 Historic Environment.</p> <p>A complete assessment of the likely impacts and effects of the Project upon identified assets within the Study Area will be reported within the ES.</p>
Lincolnshire County Council	June 2024	Email correspondence seeking approval of the Written Scheme of Investigation (WSI) for the geophysical surveys. Lincolnshire County Council requested that Historic Environment Record (HER) data is included in the WSI.	<p>Archaeological surveys (including those within Section 5 of the Project) are ongoing, supported where appropriate by WSI. The results of completed surveys will be assessed and presented within the ES.</p> <p>The findings of initial Gradiometer surveys for sections 1, 3 and 7 of the Project were presented within the June 2025 PEI Report Volume 3 Part B Section 1 Appendix 5C Detailed Gradiometer Survey Report (Ref 1), June 2025 PEI Report Volume 3 Part B Section 3 Appendix 5C Detailed Gradiometer Survey Report (Ref 1) and June 2025 PEI Report Volume 3 Part B Section 7 Appendix 5C Detailed Gradiometer Survey Report (Ref 1).</p>
Norfolk County Council	June 2024	Email correspondence seeking approval of the WSI for the geophysical surveys. Norfolk County Council outlined the Standards for Development-Led Archaeology in Norfolk.	<p>Archaeological surveys (including those within Section 5 of the Project) are ongoing, supported where appropriate by WSI. The results of completed surveys will be assessed and presented within the ES.</p> <p>The findings of initial Gradiometer surveys for sections 1, 3 and 7 of the Project were presented within the June 2025 PEI Report Volume 3 Part B Section 1 Appendix 5C Detailed Gradiometer Survey Report (Ref 1),</p>

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
			June 2025 PEI Report Volume 3 Part B Section 3 Appendix 5C Detailed Gradiometer Survey Report (Ref 1) and June 2025 PEI Report Volume 3 Part B Section 7 Appendix 5C Detailed Gradiometer Survey Report (Ref 1).
Historic Environment Technical Working Group: Historic England, Lincolnshire County Council, Cambridgeshire County Council, Norfolk County Council and The National Trust	September 2024	Meeting with the Technical Working Group to introduce the Project, the approach to the Historic Environment assessment, review key scoping responses and discuss the archaeological survey strategy.	Outcomes of this meeting are reflected in the ongoing archaeological survey programme and the individual WSIs supporting its delivery. The results of completed surveys will be assessed and presented within the ES.
North East Lincolnshire Council	September 2024	Meeting with North East Lincolnshire Council Group to introduce the Project, the approach to the Historic Environment assessment, review key scoping responses and discuss the archaeological survey strategy. North East Lincolnshire Council outlined key assets including Grimsby Dock Tower and Neolithic long barrows along the edge of the Lincolnshire Wolds.	A preliminary assessment of the impacts and effects of the Project upon the identified assets was reported within the June 2025 PEI Report Volume 2 Part B Section 1 Chapter 5 Historic Environment (Ref 1) and June 2025 PEI Report Volume 2 Part B Section 2 Chapter 5 Historic Environment (Ref 1). A complete assessment of the likely impacts and effects of the Project upon identified assets within the Study Area will be reported within the ES.
Historic England, North East Lincolnshire, Lincolnshire County Council, Cambridgeshire County Council, Norfolk County Council and The National Trust	January 2025	Meeting to discuss the PEI Report structure, the Historic Environment methodology, baseline data sources, and the non-intrusive survey for geoarchaeological monitoring and route-wide geophysical surveys. Historic England raised the importance of addressing all impacts significant and non-significant in the ES to avoid delays at examination. Norfolk County Council outlined the need to consider geophysical survey results alongside aerial photographic and LiDAR assessment as well as the need to consider different geophysical survey techniques within areas of deep Fenland deposits.	Based upon a preliminary assessment, all significant and non-significant effects within the Section 5 Study Area are presented within Supplementary PEI Report Volume 2 Part B Chapter 5 Historic Environment . For all other sections of the Project, significant and non-significant effects were presented in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 5 Historic Environment and supporting appendices (Ref 1). Archaeological surveys (including those within Section 5 of the Project) are ongoing. The results of completed surveys will be assessed and presented within the ES. A complete assessment of the likely impacts and effects of the Project upon identified assets within the Study Area will be reported within the ES.
Historic England	February 2025	Meeting with Historic England to discuss the application to schedule the remains of medieval moated site in Moat Field, West Walton. The meeting reviewed the nature and significance of the remains, the current impacts arising from the Project and potential design solutions to avoid or mitigate potential impacts to this heritage asset. Historic England advised that the medieval moated site be treated as a scheduled monument (high value heritage asset) for the purposes of the PEI Report until a designation decision is confirmed.	These discussions were specific to Section 7 of the Project. The remains of medieval moated site in Moat Field, West Walton is assessed as a high value heritage asset within June 2025 PEI Report Volume 2 Part B Section 7 Chapter 5 Historic Environment (Ref 1). It is acknowledged that the Moated enclosure has been designated a Scheduled Monument since publication of the June 2025 PEI Report. A complete assessment of the likely impacts and effects of the Project upon the Scheduled Monument will be reported within the ES.
Historic England, North East Lincolnshire, Lincolnshire County Council and Norfolk County Council	March 2025	Email correspondence seeking approval of the WSI for Stage 1 of the route-wide geophysical survey. Concerns regarding the extent of the survey corridor were raised by Norfolk County Council's archaeological advisor, and further meetings were arranged with Norfolk County Council and Lincolnshire County Council.	Archaeological surveys (including those within Section 5 of the Project) are ongoing, supported where appropriate by WSI. The findings of these surveys have therefore not been used to inform the preliminary assessments reported within the June 2025 PEI Report and the Supplementary PEI Report. The results of completed route-wide surveys, which include geophysical surveys and trial trenching, will be assessed and presented within the ES.

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
Lincolnshire County Council and Norfolk County Council	March 2025	<p>Meeting with Lincolnshire County Council and Norfolk County Council to discuss the scope and methodology for the Stage 1 route-wide geophysical survey scope within Sections 1, 2, 3, and 7 as set out in the OWSI that was shared with stakeholders for approval.</p> <p>Norfolk County Council's archaeological advisor raised issues over the width of the geophysical survey area and noted key areas of archaeological potential west of Ingleborough. Minor comments regarding the use of Event Codes and including details of the survey contractor within the document were also raised by Norfolk County Council's archaeological advisor.</p>	<p>Archaeological surveys (including those within Section 5 of the Project) are ongoing, supported where appropriate by WSI. The findings of these surveys have therefore not been used to inform the preliminary assessments reported within the June 2025 PEI Report and the Supplementary PEI Report.</p> <p>The results of completed route-wide surveys, which include geophysical surveys and trial trenching, will be assessed and presented within the ES.</p>
Water Environment and Flood Risk			
Anglian Water	August 2024	Anglian Water requested the inclusion of a Water Resource Assessment for the Project.	The results of the Water Resource Assessment will be assessed and presented within the ES.
Environment Agency	October 2024	Meeting with the EA to discuss the approach to the Water Environment and Flood Risk assessment	The Water Environment and Flood Risk methodology is presented within the Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope . This reflects the approach presented within the June 2025 PEI Report.
Environment Agency	December 2024	<p>Email correspondence with the EA to finalise the agenda for the the Lead Local Flood Authorities (LLFAs) meetings in January 2025 and to determine which sessions would benefit from joint attendance.</p> <p>Confirmation of area specific guidance for discharge rates and climate allowances.</p> <p>The EA responded to a request regarding a model availability table.</p>	<p>The models clarified by the EA relevant to assessment within the Section 5 Study Area are presented within Supplementary PEI Report Volume 2 Part B Chapter 6 Water Environment and Flood Risk and Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope.</p> <p>Further investigations of these models will be presented within the ES.</p>
Water Environment and Flood Risk Technical Working Group: EA, Internal Drainage Boards (IDBs), LLFAs, Local Planning Authorities (LPAs)	February 2025	Meeting with the Technical Working Group to introduce the Project, provide key updates, and to discuss the specific information likely to be requested by the organisations.	<p>The Water Environment and Flood Risk methodology was agreed with the organisations and is presented within the Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope. This reflects the approach presented within the June 2025 PEI Report.</p> <p>Information that needs to be collected between the writing of the Supplementary PEI Report and the production of the ES is outlined within the following documents:</p> <ul style="list-style-type: none">• Supplementary PEI Report Volume 2 Part B Chapter 6 Water Environment and Flood Risk;• Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope;• Supplementary PEI Report Volume 3 Appendix 4A Preliminary Flood Risk Assessment;• Supplementary PEI Report Volume 3 Part C Appendix 4B Water Framework Directive Screening Assessment; and• June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 6 Water Environment and Flood Risk (Ref 1).
NGET (G2W) - Internal drainage boards (IDBs) Black Sluice Internal Drainage Board, King's Lynn Internal Drainage Board, Lindsey Marsh Internal Drainage	June 2025	This meeting focused on Internal Drainage Board (IDB) interfaces, including haul road, overhead line, and substation crossings, with clearance requirements, drainage strategies, and crossing methodologies outlined. IDBs were asked to review crossing schedules and discharge assumptions. Discussion also sought clarification of the	Ongoing discussions with the IDBs will inform further design development, particularly in relation to drainage design and diverted IDB assets. Details of the final drainage design and diverted watercourses are not included within the June 2025 PEI Report or the Supplementary PEI Report.

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
Board, North Level District Internal Drainage Board, South Holland Internal Drainage Board, Welland & Deepings Internal Drainage Board, Witham Fourth District Internal Drainage Board		DCO’s interaction with drainage legislation, and confirming processes for land-related queries.	Details of the DCO scheme design and the updated assessment of associated effects upon IDB assets will be presented within the ES submitted in support of the DCO application.
Water Management Alliance (WMA) King’s Lynn IDB South Holland IDB	September 2025	The discussion emphasised that there should be no overall reduction in drainage volume within any catchment, with particular concern about the limited capacity in the Ingleborough catchment. The new developer contribution guidance was also discussed. Bridges are generally preferred over culverts. The WMA also stated that porous fill for small watercourses would not be acceptable.	Ongoing discussions with the IDBs will inform further design development, particularly in relation to drainage design and diverted IDB assets. Details of the final drainage design and diverted watercourses are not included within the June 2025 PEI Report or the Supplementary PEI Report. Details of the DCO scheme design and the updated assessment of associated effects upon IDB assets will be presented within the ES submitted in support of the DCO application.
Geology and Hydrogeology			
Anglian Water and the EA	September 2024	Meeting with Anglian Water and the EA to discuss the emerging design of the Project and its location within the two Source Protection Zone (SPZ) 1 areas within New Grimsby West Substation to New Lincolnshire Connection Substation A (Section 2) and its proximity to Anglian Water drinking water abstractions. Further correspondence with Anglian Water will take place to keep them informed of the progressing design of the Project.	The preliminary assessment of the effects of the Project on SPZs is presented within: <ul style="list-style-type: none">• June 2025 PEI Report Volume 2 Part B Section 1 Chapter 7 Geology and Hydrogeology (Ref 1);• June 2025 PEI Report Volume 2 Part B Section 2 Chapter 7 Geology and Hydrogeology (Ref 1);• June 2025 PEI Report Volume 2 Part B Section 3 Chapter 7 Geology and Hydrogeology (Ref 1); and• June 2025 PEI Report Volume 2 Part B Section 4 Chapter 7 Geology and Hydrogeology (Ref 1).
Agriculture and Soils			
Natural England	May 2024	Meeting with Natural England to discuss the approach to the Agricultural Land Classification (ALC) surveys and the potential to use predictive mapping to fill gaps (due to, for example, high Unexploded Ordnance (UXO) risk, access refusal etc.). Further correspondence with Natural England will take place to present survey data, discuss the detail of predictive mapping (if required) and discuss the developing Outline Soil Management Plan.	The Agriculture and Soils methodology was agreed with Natural England and is presented within the Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope . This reflects the approach presented within the June 2025 PEI Report.
Lincolnshire County Council	December 2024	Meeting with Lincolnshire County Council to discuss the approach to the ALC surveys and the potential to use predictive mapping to fill gaps (due to, for example, high UXO risk, access refusal etc.). Further correspondence with Lincolnshire County Council will take place to present survey data, discuss the detail of predictive mapping (if required) and discuss the developing Outline Soil Management Plan.	The Agriculture and Soils methodology was agreed with Lincolnshire County Council and is presented within the Supplementary PEI Report Volume 3 Part A Appendix 4B Environmental Impact Assessment Methodologies and Scope . This reflects the approach presented within the June 2025 PEI Report.
Traffic and Movement			
Regular Traffic and Transport Meeting Cambridgeshire County Council	June 2024 to present	National Grid has met regularly with Cambridgeshire County Council to discuss traffic and movement technical matters, including but not limited to: <ul style="list-style-type: none">• haul road and access strategies, with around 15 construction access points expected in Cambridgeshire;	The preliminary assessment of traffic and movement effects within Cambridgeshire is reported in the June 2025 PEI Report Volume 2 Part B Sections 6 and 7 Chapter 9 Traffic and Movement (Ref 1). Proposed management measures to be adopted during construction are included within the Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice (CoCP) .

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
		<ul style="list-style-type: none">supporting survey work to inform the EIA and Transport Assessment;the need to protect public safety, particularly around PRoW;potential construction vehicle movements;Council concerns regarding the potential cumulative impact of several schemes being delivered at the same time.Availability of local transport models;road suitability, safety at crossovers and clarification of bellmouth vs crossover usetraffic control measures and road safety audits	<p>This reflects the Preliminary CoCP presented within the June 2025 PEI Report. As outlined within this document, it will be supplemented in due course by a Preliminary Construction Traffic Management Plan and Public Rights of Way Management Plan (PRoWMP), which will be submitted in support of the DCO application.</p> <p>A full assessment will be reported in the ES, supported by further survey and modelling work and a Transport Assessment, which will reflect further engagement with Cambridgeshire County Council.</p> <p>The cumulative effects on traffic and movement of the Project and any wider developments which may be under construction or operational concurrently, will be assessed and presented in the ES within the Cumulative Effects Assessment. Reference may be made to Supplementary PEI Report Volume 2 Part C Route-wide Chapter 9 Cumulative Effects for further details of the proposed approach.</p>
Regular Monthly Traffic and Transport Meeting	June 2024 to present	National Grid has met regularly with Lincolnshire County Council to discuss traffic and movement technical matters, including but not limited to:	The preliminary assessment of traffic and movement effects within the Section 5 Study Area is reported within Supplementary PEI Report Volume 2 Part B Chapter 9 Traffic and Movement .
Lincolnshire County Council		<ul style="list-style-type: none">haul road and access plans, aiming to reduce the number of access points in Lincolnshire;the need to avoid villages and populous centres direct construction traffic along Strategic Road Networks (SRN), primary route network/'A' roads and via the haul roads as far as practicable;the Council requested early engagement on PRoW diversions and haul road interfaces;data sharing, including PRoW GIS data and accident data;Council concerns regarding the potential cumulative impact of several schemes being delivered at the same time;coordination with wider Projects, including Outer Dowsing.the Council noted that roads of less than 6 m in width may require passing places.Know areas of capacity issues and/or safety concern, including Junction 20 (A16 / A18) and Junction 27 (A16 / South Thoresby).	<p>For all other sections of the Project, the preliminary assessment was presented in the June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 9 Traffic and Movement (Ref 1).</p> <p>Proposed management measures to be adopted during construction are included within the Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice (CoCP). This reflects the Preliminary CoCP presented within the June 2025 PEI Report. As outlined within this document, it will be supplemented in due course by a Preliminary Construction Traffic Management Plan and Public Rights of Way Management Plan (PRoWMP), which will be submitted in support of the DCO application.</p> <p>A full assessment will be reported in the ES, supported by further survey and modelling work and a Transport Assessment, which will reflect further engagement with Lincolnshire County Council.</p> <p>The cumulative impacts on traffic and movement due to the delivery of several projects at the same time will be assessed and presented in the ES within the Cumulative Effects Assessment. Reference may be made to Supplementary PEI Report Volume 2 Part C Route-wide Chapter 9 Cumulative and In-Combination Effects for further details of the proposed approach.</p> <p>Indicative passing places within the draft Order Limits (shown as Indicative Areas for Temporary Highway Improvements) are presented within Supplementary PEI Report Volume 2 Part A Figure 5.1 Proposed Project Design. The location of passing places identified are subject to change as the Project design develops and final locations will be presented in the ES.</p>
Regular Monthly Traffic and Transport Meeting	August 2024 to present	National Grid has met regularly with Norfolk County Council to discuss traffic and movement technical matters, including but not limited to:	The preliminary assessment of traffic and movement effects within Norfolk is reported in the June 2025 PEI Report Volume 2 Part B Section 7 Chapter 9 Traffic and Movement (Ref 1).
Norfolk County Council		<ul style="list-style-type: none">The Council requested collaboration with Norfolk Police when working with abnormal indivisible loads (AILs) due to time restrictions on certain highways.	<p>Proposed management measures to be adopted during construction are included within the Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice (CoCP). This reflects the Preliminary CoCP presented within the June 2025 PEI</p>

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
		<ul style="list-style-type: none">• The Council raised concerns regarding the potential cumulative impact of several development projects being delivered at the same time.• The unsuitability of Sutton Bridge for abnormal indivisible loads (AILs).• The Council flagged the need to understand the nature of weight restrictions on Lynn Road.• The suitability of West Drove North for access, noting that while the road itself may be wide enough, bends may require widening.• Traffic uplift on link 35A (West Drove North).• Potential disruption to non-motorised users on Lynn Road (a national cycle route).• Visibility challenges at bellmouths.• The Council advised that temporary speed restrictions (TTROs) may be needed on 60mph roads and supported using 85th percentile speeds where visibility is limited.• The Council flagged the need for mitigation around peak HGV movements on West Drove North and requested access and general arrangement plans.• The Council raised concerns about the treatment of unsurfaced roads, drainage design at bellmouths, and coordination with local stakeholders and authorities.• Access options, suitability of certain roads for abnormal loads, and the need to share traffic data once available	<p>Report. As outlined within this document, it will be supplemented in due course by a Preliminary Construction Traffic Management Plan and Public Rights of Way Management Plan (PRoWMP), which will be submitted in support of the DCO application.</p> <p>A full assessment will be reported in the ES, supported by further survey and modelling work and a Transport Assessment, which will reflect further engagement with Norfolk County Council. This will include an assessment of any impacts of abnormal indivisible loads.</p> <p>The cumulative impacts on traffic and movement due to the delivery of several projects at the same time will be assessed and presented in the ES within the Cumulative Effects Assessment. Reference may be made to Supplementary PEI Report Volume 2 Part C Route-wide Chapter 9 Cumulative and In-Combination Effects for further details of the proposed approach.</p>
Regular Monthly Traffic and Transport Meeting North East Lincolnshire Council	August 2024 to October 2024	<p>National Grid has met regularly with Norfolk County Council to discuss traffic and movement technical matters, including but not limited to:</p> <ul style="list-style-type: none">• The Council have stated that a detailed Traffic Assessment is required to understand the impacts on the road network and how these impacts can be mitigated for.• Progression of haul road and compound designs, aiming to consult on all potential locations to avoid future changes.• Review of strategic transport routes and port options.• Surveys.• The importance of engagement with the Highway Authority throughout the Project lifecycle.• The importance of early engagement with the Council's Rights of Way Officer when PRoWs may be impacted by the Project.• Sharing of PRoW shapefiles by the Council and commitment to providing accident and traffic count data• The Council raised concerns regarding the potential demand on the highway network within North East Lincolnshire as there are other committed developments being delivered at the same time as this Project, including Grimsby West.• suitability of the A18 for abnormal loads, potential road widening on Aylesbury Road, and the need for mitigation at key access points like Waltham Road.	<p>The preliminary assessment of traffic and movement effects within North East Lincolnshire Council is reported in the June 2025 PEI Report Volume 2 Part B Sections 1 and 2 Chapter 9 Traffic and Movement (Ref 1).</p> <p>Proposed management measures to be adopted during construction are included within the Supplementary PEI Report Volume 3 Part A Appendix 5A Preliminary Code of Construction Practice (CoCP). This reflects the Preliminary CoCP presented within the June 2025 PEI Report. As outlined within this document, it will be supplemented in due course by a Preliminary Construction Traffic Management Plan and Public Rights of Way Management Plan (PRoWMP), which will be submitted in support of the DCO application.</p> <p>A full assessment will be reported in the ES, supported by further survey and modelling work and a Transport Assessment, which will reflect further engagement with North East Lincolnshire Council.</p> <p>The cumulative impacts on traffic and movement due to the delivery of several projects at the same time will be assessed and presented in the ES within the Cumulative Effects Assessment. Reference may be made to Supplementary PEI Report Volume 2 Part C Route-wide Chapter 9 Cumulative and In-Combination Effects for further details of the proposed approach.</p>

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
		<ul style="list-style-type: none"> The council also flagged challenges in navigating the volume of consultation documents. 	
Fenland District Council (Port of Wisbech Harbour Authority)	December 2024 and July 2025	Fenland Harbour Authority did not raise any objections but highlighted key considerations for abnormal load transport. Wisbech port was noted as unsuitable for heavy lifts, with Sutton Bridge preferred due to better access. They recommended a site visit to assess tidal and infrastructure constraints and emphasised the need to maintain existing pylon heights over the River Nene.	<p>The materials transport strategy remains in development and will be informed by ongoing engagement with the Port of Wisbech Harbour Authority and other operators of strategic hubs which could be utilised during construction.</p> <p>The outcome of these discussions will inform development of the ES to be submitted in support of the DCO application and the supporting Transport Assessment. They have not directly informed the preliminary assessment presented in the Supplementary PEI Report or June 2025 PEI Report.</p>
National Highways	December 2024	Meeting with National Highways to introduce the Project, provide key updates, and to discuss key impacts and mitigation measures.	The preliminary assessment of traffic and movement effects is reported within Supplementary PEI Report Volume 2 Part B Sections 1-7 Chapter 9 Traffic and Movement and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 9 Traffic and Movement (Ref 1). A full assessment will be reported in the ES, supported by a Transport Assessment.
Traffic and Transport Technical Working Group: Cambridgeshire County Council, Lincolnshire County Council, Norfolk County Council, North East Lincolnshire Council	April 2025	Meeting with the Technical Working Group to introduce the Project, provide key updates, and to discuss key impacts and mitigation measures.	The preliminary assessment of traffic and movement effects is reported within Supplementary PEI Report Volume 2 Part B Sections 1-7 Chapter 9 Traffic and Movement and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 9 Traffic and Movement (Ref 1). A full assessment will be reported in the ES, supported by a Transport Assessment.
National Highways	April 2025	Meeting with National Highways to provide key updates, and to discuss key impacts and mitigation measures. They asked for clarity on who will handle AIL movements for G2W and EGL projects.	The preliminary assessment of traffic and movement effects is reported within Supplementary PEI Report Volume 2 Part B Sections 1-7 Chapter 9 Traffic and Movement and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 9 Traffic and Movement (Ref 1). A full assessment will be reported in the ES, supported by a Transport Assessment.
Traffic and Transport Quarterly Forum with Local Highway Authorities (LHAs)	September 2025	Authorities emphasised cumulative impact coordination (including EGL 3&4 and Viking CCS), queried proposed construction working hours, and raised AIL routing concerns at Sutton Bridge alongside drainage and temporary structure requirements (culverts/bridges) needing LLFA coordination; they also requested advanced HGV warning signage on the National Cycle Network, clear PRow closure/diversion communications, and additional junction counts with the ability to add sensitive locations to validate assumptions.	The outcome of these discussions will inform development of the ES to be submitted in support of the DCO application. They have not directly informed the preliminary assessment presented in the Supplementary PEI Report.
National Highways & Grimsby to Walpole Quarterly engagement meeting	October 2025	Statutory consultation feedback highlighted concerns about cumulative project impacts and the need for further investigation into collision clusters, especially on the A47. The group agreed to use detailed accident data and confirmed no clusters on the A180. Worker Travel Plan will be included in the CTMP. Asset protection mapping and overlay criteria to be reviewed. Junctions for traffic counts were agreed, with particular attention to M180/A15 and A47/A17. Modelling approach was accepted, and base model will be shared. Abnormal load routes and access arrangements were reviewed, with no major issues identified.	The outcome of these discussions will inform development of the ES to be submitted in support of the DCO application. They have not directly informed the preliminary assessment presented in the Supplementary PEI Report. A Worker Travel Plan will be included in the CTMP accompanying the ES.

Organisation(s)	Date	Summary of Issues Raised	Consideration in the PEI Report
Port of Sutton Bridge	October 2025	Discussion around using either Sutton Bridge or Wisbech Harbour for AIL routes. Port of Sutton Bridge advised that they had land available for storage/resting plant and would be open to the Applicant using the port as a means for transporting plant from sea/river to land.	<p>The materials transport strategy remains in development and will be informed by ongoing engagement with the Port of Sutton Bridge and other operators of strategic hubs which could be utilised during construction.</p> <p>The outcome of these discussions will inform development of the ES to be submitted in support of the DCO application and the supporting Transport Assessment. They have not directly informed the preliminary assessment presented in the Supplementary PEI Report or June 2025 PEI Report.</p>
National Highways	October 2025	AIL discussion	The outcome of these discussions will inform development of the ES to be submitted in support of the DCO application. They have not directly informed the preliminary assessment presented in the Supplementary PEI Report.
Noise and Vibration			
North East Lincolnshire Council	May 2025	Meeting with North East Lincolnshire Council Public Health Officer to discuss the baseline assessment and expected impacts from the Grimsby West substation in advance of publishing the PEI Report.	<p>The preliminary assessment of noise and vibration effects is reported within June 2025 PEI Report Volume 2 Part B Section 1 Chapter 10 Noise and Vibration (Ref 1) and considered in June 2025 PEI Report Volume 2 Part B Section 1 Appendix 10A Baseline Noise Survey Data (Ref 1).</p> <p>A full assessment will be reported in the ES.</p>
Socio-economics, recreation and tourism			
Lincolnshire County Council	February 2025	<p>Meeting with Lincolnshire County Council to discuss the Project and present a summary of the proposals.</p> <p>Lincolnshire County Councils queried where airfields, community benefits and agricultural land and viability would be considered within the PEI Report. They also queried whether tourist accommodation receptors are considered, and if so, where.</p>	<p>Agricultural land and viability is presented within Supplementary PEI Report Volume 2 Part B Chapter 8 Agriculture and Soils and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 8 Agriculture and Soils (Ref 1).</p> <p>Information on potential interactions with airfields is presented within Supplementary PEI Report Volume 2 Part B Sections 1-7 Chapter 11 Socio-economics, Recreation and Tourism and June 2025 PEI Report Volume 2 Part B Sections 1-4 and 6-7 Chapter 11 Socio-economics, Recreation and Tourism (Ref 1). A full assessment will be included within the ES.</p> <p>The effects on tourism bedspaces is presented within Supplementary PEI Report Volume 2 Part C Route-wide Chapter 6 Socio-economics, Recreation and Tourism.</p> <p>Any local community investment will be captured under the National Grid Community Grant Scheme and will be dealt with separately.</p>
Air Quality			
<p>Air Quality Technical Working Group (Meeting 1)</p> <p>North East Lincolnshire Council, East Lindsey District Council, South Holland District Council, Borough Council of King's Lynn and West Norfolk; Fenland District Council</p>	October 2025	<p>Meeting to summarise the approach adopted for the purposes of the June 2025 PEI Report and discuss key elements of stakeholder feedback to the Stage 2 Consultation.</p> <p>Additionally, proposed locations for targeted air quality monitoring to inform the ES assessments were also presented by NGET.</p>	<p>Due to the timing of these discussions, they have not informed the preliminary assessments presented in the June 2025 PEI Report or Supplementary PEI Report.</p> <p>Discussions within the Technical Working Group will however inform the full assessments to be reported in the ES.</p>

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Climate Change			
No stakeholder engagement has been undertaken in relation to climate change over and above formal consultation on the Project			
Health and Wellbeing			
Norfolk County Council	July 2024	Meeting with Norfolk County Council to discuss the inclusion of mental health impacts within the Health and Wellbeing assessment.	Supplementary PEI Report Volume 2 Part C Chapter 7 Health and Wellbeing presents a preliminary assessment on Health and Wellbeing as a result of the Project. The assessment of Health and Wellbeing has been undertaken in the context of both physical and mental health.

References

- Ref 1 National Grid (2025). Grimsby to Walpole Preliminary Environmental Information Report [online]. Available at: <https://www.nationalgrid.com/the-great-grid-upgrade/grimsby-to-walpole/document-library#4257225834-3023854277> [Accessed 14 October 2025]
- Ref 2 National Grid Electricity Transmission (2025). Grimsby to Walpole Stage 1 Consultation Feedback Report [online]. Available at: <https://www.nationalgrid.com/document/560496/download> [Accessed 12 September 2025].

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