

National Grid Cable Tunnel Replacement Project

Environmental Statement Volume II Chapter 4: EIA Methodology

December 2023



Quality information

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4 EIA Methodology

4.1 Introduction

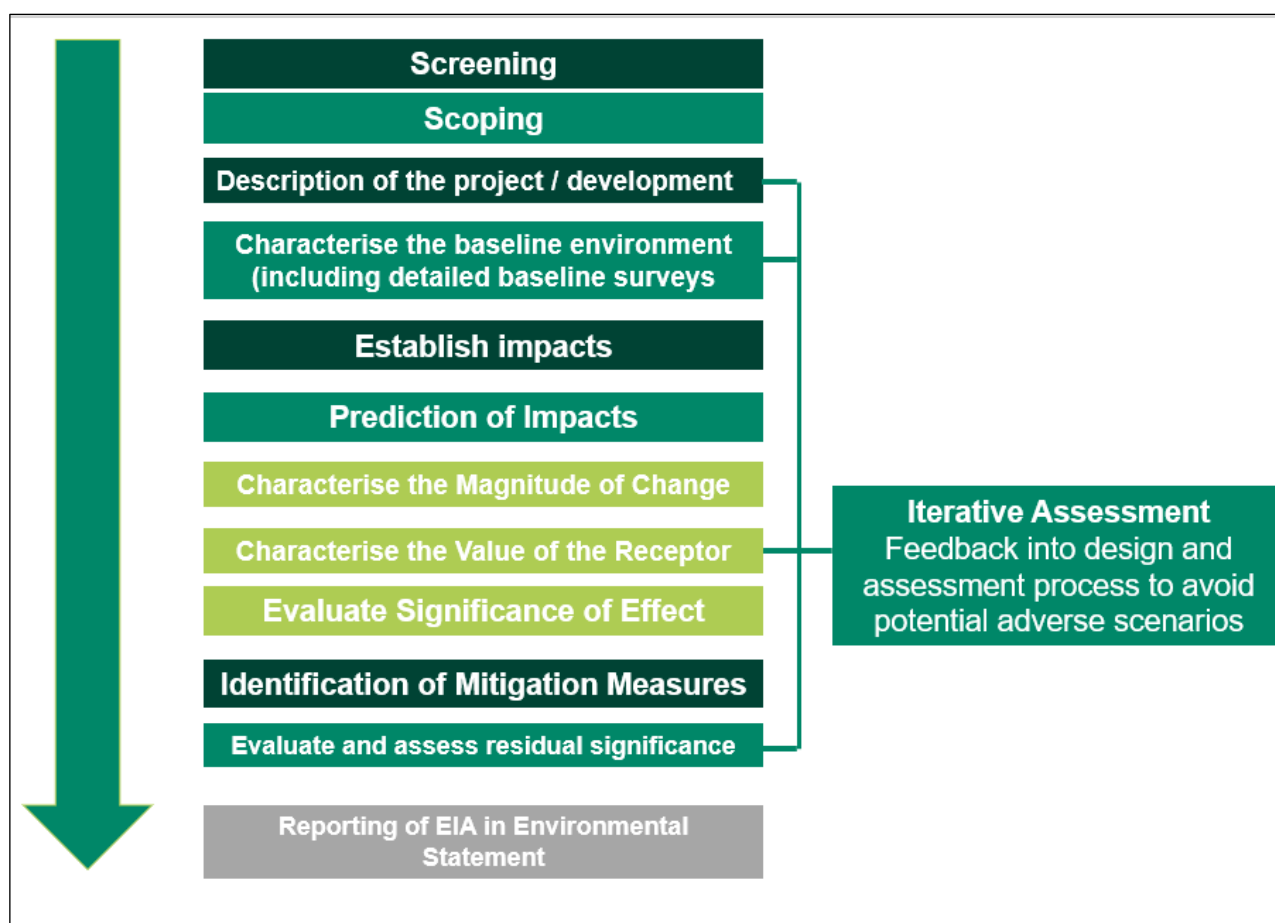
- 4.1.1 This chapter of the Environmental Statement (ES) describes the approach and outlines the scope of the environmental assessment for the Tilbury to Grain and Tilbury to Kingsnorth (TKRE) Cable Tunnel Replacement Project (hereafter 'the Proposed Development'). In addition, it also provides general information about the environmental assessment process including the key steps taken, and the methodology and the terminology adopted.
- 4.1.2 This chapter is supported by the following appendices:
- **Appendix 4.1 EIA Screening Opinions:** copies of the Environmental Impact Assessment (EIA) screening responses received from Thurrock Council, Gravesham Borough Council and the Marine Management Organisation (MMO);
 - **Appendix 4.2 EIA Screening Opinion Project Responses:** provides responses to the EIA screening response consultation provided by Thurrock Council and Gravesham Borough Council as to how these comments have been taken into account for the EIA / planning applications; and
 - **Appendix 4.3 Competent Expert Evidence:** This provides a statement from National Grid outlining the relevant expertise or qualifications of the Competent Expert who prepared the ES as required under The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 Part 5 Section 18(5)(b).

4.2 Overview of Environmental Assessment

- 4.2.1 Environmental assessment is the process of identifying, evaluating and mitigating the likely significant environmental effects of a proposed development. It promotes the early identification and evaluation of the likely significant environmental effects of the development and enables appropriate mitigation (that is measures to avoid, reduce or offset significant adverse effects) to be identified and incorporated into the design of the development, or commitments to be made to implement environmentally sensitive construction methods and practices. The results of the environmental assessment also ensure that decision makers, such as Local Planning Authorities (LPA) and statutory consultees as well as other interested parties including local communities, are aware of a proposed development's potential environmental effects and whether these may be significant or not so that they may be considered in the determination of an application for planning permission.
- 4.2.2 The assessment methodology follows a systematic approach in order to assess the potential impacts and subsequent effects of the Proposed Development on the natural and physical environments, and material assets where applicable and in an appropriate manner. The environmental assessment has been undertaken in parallel with the development of the design of the Proposed Development, thereby maximising opportunities to mitigate likely significant effects as they have been identified.
- 4.2.3 The EIA has followed the iterative EIA process, as illustrated in Plate 4-1 and detailed below. It is noted that these stages have followed on from EIA screening complete with Thurrock Council and Gravesham Borough Council to understand whether or not a statutory EIA was necessary. These screening responses are provided in Appendix 4.1.
- **Scoping studies:** Following on from the screening process, scoping is the next step in the EIA process. Although a formal Scoping Report was not produced, scoping meetings were held with relevant consultees prior to the submission of the planning applications and accompanying EIA to ensure all topics and elements of the Proposed Development have been appropriately assessed. Further information on the scope of this EIA is detailed in section 4.4 of this chapter and further information on the scoping meetings is detailed in Chapter 5: Consultation.

- **Baseline studies:** These have comprised a combination of desk-based studies and field surveys to establish an understanding of the existing environmental conditions (the 'baseline') within the study area and therefore ensure an accurate assessment of the likely significant effects of the Proposed Development. As the design has become more defined, the scope of the baseline studies has also become more detailed. Baseline study information and data are provided in the discipline chapters and relevant appendices of this ES.
- **Assessment of impacts:** The potential environmental impacts of the Proposed Development (both beneficial and adverse) have been predicted and evaluated using a range of specialist methods which are described in subsequent chapters of this ES and in Appendix 4.3. Where possible, mitigation measures have been incorporated into the base scheme design such that they inform its detailed design and/or how it shall be constructed. Through iterative assessment, potential impacts have been predicted and opportunities to mitigate them identified in the design, with the aim of preventing or reducing impacts as much as possible. The approach provides the opportunity to prevent or reduce adverse effects from the outset; and
- **Identification of likely significant effects:** A detailed description of the general approach to assessing effects is contained in this chapter with detailed approaches tailored to individual environmental topics following topic-specific guidance contained in subsequent sections. The ES identifies the significance of both the potential and residual effects of the Proposed Development and identifies whether these are significant or not significant. Residual effects are those which remain taking into account proposed project specific mitigation.

Plate 4-1: Overview of the EIA Process



4.3 Content of the Environmental Statement

- 4.3.1 The EIA will follow the requirements outlined in the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (Ref 4-1). Schedule 4 of the EIA Regulations sets out the minimum information which must be included within an ES. Table 4-1 summarises these requirements and identifies where the required information may be found within this ES.

Table 4-1: 2017 EIA Regulations: Schedule 4 Requirements

Legislative Requirement	Where this information is in this ES
Description of the development, including in particular— (a) a description of the location of the development; (b) a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases; (c) a description of the main characteristics of the operational phase of the development, for instance, nature and quantity of the materials and natural resources used; (d) an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the construction and operation of the proposed development.	The Proposed Development is described in Volume II Chapter 3: Project Description of the ES. This chapter provides a detailed description of each of the components that constitute the Proposed Development including the proposed sealing end compounds (contained the new headhouses) and overhead line works, as well as the construction methods associated with these as well as the new tunnel. This description includes their location, physical characteristics, temporary supporting land take requirements, installation and construction methods as well as proposed reinstatement works.
A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	The approach to the development of the Proposed Development through the appraisal of strategic options, as well as, siting and routeing, and the alternatives which have been considered are described in Volume II Chapter 2: Alternatives.
A description of the aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.	The results of baseline studies and the aspects of the environment likely to be significantly affected by the Proposed Development (referred to as receptors) have been identified and are reported in Volume III Chapter 7-14 and Volume IV Chapters 15-22.
A description of the factors specified in regulation 4(2) likely to be significantly affected by the development (population, human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage, and landscape).	The factors likely to be significantly affected by the Proposed Development have been identified and are reported in Volume III Chapters 7-14 and Volume IV Chapters 15-22. The scope of and approach to the assessment has been agreed with the determining authority and statutory consultees in subsequent and technical discussions. The outcomes of scoping are described further later in this chapter (see section 4.4), and Screening Opinions received from the LPAs provided in Volume VI Appendix 4.1. Volume II Chapter 5 summarises the technical discussions held with consultees.
A description of the likely significant effects of the development on the environment resulting from: the construction and existence of the development; the use of natural resources, considering as far as possible the sustainable availability of these resources;	The likely significant effects resulting from the construction and operation of the Proposed Development including the direct, indirect, temporary, permanent, beneficial and adverse effects have been identified, assessed and reported in Volume III Chapter 7-14 and Volume IV Chapters 15-22.

Legislative Requirement	Where this information is in this ES
the emissions of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; the risks to human health, cultural heritage or the environment; the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources; the impact of the project on climate and the vulnerability of the project to climate change; and the technologies and the substances used.	The assessment of cumulative effects is reported in Volume V Chapter 23: Cumulative Effects Assessment.
A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties encountered and the main uncertainties involved.	Forecasting methods, limitations and uncertainties are detailed, where relevant, in each individual technical chapter in Volume III Chapters 7-14 and Volume IV Chapter 15-22.
A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements.	The measures proposed to prevent, reduce and where required offset any significant adverse effects (referred to as mitigation) are identified in Volume III Chapters 7-14 and Volume IV Chapter 15-22. Note that Appendix 2.1: Outline Construction Environmental Management Plan (CEMP) in Volume IV brings together the additional mitigation measures identified through the EIA that will be embedded within the approach to and management of construction activities.
A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.	As the Proposed Development is not considered a source of hazard that could result in a major accident and/or disaster this topic is scoped out of the ES.
A non-technical summary of the information provided above.	A Non-Technical Summary of the key findings of the environmental assessment is set out in Volume I of the ES.
A reference list detailing the sources used for the descriptions and assessments included in the ES.	A reference list is included in each chapter of the ES, where relevant.

4.4 EIA Screening and Scoping

- 4.4.1 In June 2023, a detailed Environmental Screening Report was submitted to Thurrock Council and Gravesham Borough Council (Ref 4-2). On 7 July 2023 Thurrock Council confirmed through their screening opinion that the Proposed Development would not be considered EIA development. On 3 August 2023 Gravesham Borough Council confirmed through their screening opinion that the Proposed Development would be considered EIA development. Due to the opposing views of Thurrock Council, and Gravesham Borough Council regarding if the Proposed Development constituted EIA development, National Grid decided to consider the whole project as EIA development.
- 4.4.2 The detailed Environmental Screening Report also contained the proposed scope of a non-statutory environmental appraisal. Comments received during the screening process from Gravesham Borough Council have been considered and project responses provided in Appendix 4.2 (Volume VI). No comments were received from Thurrock Council during the screening process.
- 4.4.3 Although a formal Scoping Report was not produced, additional scoping meetings were held during August and September 2023 to ensure that the scope of the EIA was robust and proportionate, but sufficient to inform decision makers of the Proposed Development's potential environmental effects

and whether these may be significant or not so that they may be considered in the determination of an application for planning permission.

4.4.4 The following topics have been entirely scoped out of the ES:

- **Health and Wellbeing:** Given that individual topic chapters, namely Air Quality, Noise and Vibration, Traffic and Transport will form part of the EIA and will consider and assess potential impacts to human receptors at an appropriate geographical scale, it is not proposed to include a standalone chapter relating specifically to human health within the ES. This is considered to be a proportional approach. Relevant mitigation measures and further consideration of residual effects on human receptors will be provided in each relevant ES chapter. As a result, any health impacts that might occur in each of these areas will be assessed directly within the EIA process;
- **Climate Change:** The vulnerability of the Proposed Development to climate change and extreme weather events is being considered as part of the design process with appropriate adaptation measures incorporated into the design of the Proposed Development. Good industry construction practices would be used, and a detailed description of all surface water runoff control measures have been incorporated into the Drainage Management Plan (submitted with the planning application) and the Outline CEMP (ES Volume VI Appendix 3.1). The Drainage Management Plan (Document Reference 30003364-BHK-XX-XX-RP-C-02060) ensures that any surface water run-off is safely directed away from the SECs, without increasing flood risk elsewhere. A Flood Risk Assessment (Document Reference 30003364-BHK-XX-XX-RA-C-02002) has also been undertaken and submitted with the planning application. The Proposed Development is part of the Ofgem's new ASTI framework (published December 2022) (Ref 4-6). National Grid is responsible for delivering the extensive onshore transmission system enhancements that are required to achieve the government's 2030 power sector decarbonisation target;
- **Agricultural Land:** There would be no loss of agricultural land associated with the Proposed Development in Tilbury. The land is in industrial use and largely comprises of existing hard standing. In Gravesend, the Proposed Development is within an area of Grade 4, Poor agricultural land. Grade 4 is not classed as best and most versatile (BMV) and so there would be no loss of BMV land. Soil resources would be protected against damage and loss by the adoption of industry standard methods for the handling and storage of soils appropriate to the soil types identified which is detailed in the Outline CEMP;
- **Geology and Hydrogeology:** This assessment is within the Phase 1 Preliminary Risk Assessment (PRA) reports (Tilbury and Gravesend), submitted with the planning application. Ground stability issues are scoped out as this would be addressed as part of the engineering design. The tunnelled section has not been considered in the Phase 1 PRA, as no effects are anticipated from contaminated land. The assessment of effects from land contamination on construction and maintenance workers during construction (and during future operation) is scoped out, as these workers will be protected under Health and Safety legislation. Any potential effect is considered to be temporary and will be avoided, prevented and reduced through the implementation of standard mitigation measures incorporated into the CEMP (an outline version is provided in Appendix 3.1, Volume VI). Operational effects are scoped out as it is not expected that the proposed development would introduce sources of contamination. The assessment of effects of land contamination on construction materials is also scoped out as it is considered that the Proposed Development will use materials that are appropriate for the identified ground conditions.
- **Major Accidents and Disasters:** There are few major accident and disaster events which could realistically occur, due to the nature of the Proposed Development and its location in the UK. The most notable is likely the Proposed Development's position adjacent to the River Thames, where there are flood defences present along which offer protection from tidal flooding. The design of the Proposed Development has been developed to include allowances for future climate change predicted effects on flooding and also through discussions with Environment Agency. The potential risk of breach events has been considered in the EIA, specifically in the Flood Risk Assessment which accompanies the planning applications.

4.4.5 The following topics are scoped into the ES but have matters within their assessment that have been scoped out, as described below:

- **Traffic and Transport:**

- Assessment of the operational phase has been scoped out as the only operational traffic generated during the operational phase would be associated with infrequent repair and routine maintenance works similar to the existing baseline. This was discussed and agreed with the relevant highways authorities: Thurrock Council and National Highways on 6 September 2023, and Kent County Council on 11 September 2023;

- **Noise and Vibration:**

- Assessment of construction noise on the Tilbury side has been scoped out as there are no sensitive noise receptors within 300m.
- Assessment of construction and operational vibration has been scoped out as it is unlikely that there will be significant effects due to the tunnel depth of approximately 50m and the distance to sensitive receptors. These items were discussed and agreed via email with the Environmental Health Officers at Gravesham Borough Council on 13 November 2023. No response was received from Thurrock Council;

- **Air Quality:**

- Assessment of the operational phase. Once operational there are no processes that may lead to an effect on local air quality. It is not expected that operational activity would exceed that of the current levels at the existing headhouses and sealing end compounds. Therefore, operational effects have been scoped out.
- Assessment of barge movements associated with the removal of spoil is screened out of assessment. Emissions from such an intermittent and infrequent source will only have a negligible effect on air quality. These items were also discussed and agreed via email with the Environmental Health Officers at Gravesham Borough Council on 13 November 2023. No response was received from Thurrock Council.

- **Materials and Waste:**

- Assessment of waste arising from extraction, processing and manufacture of construction components and products;
- Assessment of management of waste from the Proposed Development e.g., on water resources, air quality, noise or traffic resulting from the generation, handling, on-site temporary storage or off-site transport of materials and waste are addressed separately in other relevant chapters;
- Assessment of direct impacts on safeguarded/allocated mineral and waste sites. The Proposed Development does not pass through any such sites therefore this aspect is scoped out of the assessment;
- Assessment of effects on the availability of materials during operation: forecast effects are (using professional judgement) considered negligible in relation to the scale and nature of the development;
- Assessment of effects of the Proposed Development on regional inert and non-hazardous waste landfill capacity and national hazardous waste landfill capacity during operation. Effects associated with the operational phase are proposed to be scoped out due to the nature of the Proposed Development, and knowledge of similar projects limited operation material usage and waste disposal requirements; and
- Assessment of effects associated with decommissioning as the Proposed Development has a long design life and as such it is not considered possible to reliably forecast decommissioning requirements and infrastructure far in the future.

- **Cumulative Effects:**
 - Assessment of cumulative operational effects have been scoped out it is not expected that operational activity would exceed that of the current levels at the existing SECs.

4.5 EIA Methodology

- 4.5.1 The EIA will identify potentially significant adverse environmental effects and, if any, propose project specific mitigation measures to avoid, reduce or offset adverse environmental effects or maximise environmental benefits.

Characterisation of the Baseline Environment

- 4.5.2 In order to assess the potential impacts resulting from the Proposed Development it is necessary to first establish the environmental conditions that currently exist within the vicinity of the Proposed Development as well as the likely evolution of the baseline without the development of the Proposed Development.
- 4.5.3 Appropriate understanding of the baseline for each environmental receptor will be collated through some or all of the following:
- Review of primary baseline studies (field surveys);
 - Review of secondary sources (desk-based, i.e. review of existing documentation and literature); and
 - Stakeholder consultation.
- 4.5.4 The key data sources used to establish the baseline will be described in each technical assessment chapter.

Assessment of Impacts

- 4.5.5 The IEMA guidelines (Ref 4-3) state: *“The assessment stage of the EIA should follow a clear progression; from the characterisation of ‘impact’ to the assessment of the significance of the effects taking into account the evaluation of the sensitivity and value of the receptors.”*
- 4.5.6 The prediction of potential impacts will be undertaken to determine what could happen to each environmental receptor as a consequence of the Proposed Development and its associated activities. The definitions used to describe impacts are explained in Table 4-2.

Table 4-2: Impact Definition

Terms	Definition
Direct impact	Impacts that result from a direct interaction between the Proposed Development activities and the receiving environment.
Indirect impact	Impacts on the environment, which are not a direct result of the Proposed Development / Proposed Development activities, often produced away from the activity or as a result of a complex pathway.
Cumulative impact	Impacts that result from incremental changes caused by other present or reasonably foreseeable actions together with the Proposed Development (Ref 4-4). Generally considered to be the same impact but from different projects e.g. noise generated from two separate projects combining to affect residential amenity.
Beneficial impact	An impact that is considered to represent an improvement on the baseline condition or introduces a new desirable factor (Ref 4-5).
Adverse impact	An impact that is considered to represent an adverse change from the baseline condition or introduces a new undesirable factor (Ref 4-5).

Magnitude of Change

4.5.7 General criteria for defining the magnitude of an impact are set out in Table 4-3. Key factors that influence this include:

- **Scale of change** – The scale of change refers to the degree of change to or from the baseline environment caused by the impact being described;
- **Spatial extent** – The extent of an impact is the full area over which the impact occurs; and
- **Duration and frequency** – The duration is the period within which the impact is expected to last prior to recovery or replacement of the feature. Frequency refers to how often the impact will occur.

Table 4-3: Impact Magnitude Criteria

Magnitude	Criteria
High	Long term and/or regional level loss; or major alteration to key elements/features of the baseline condition such that post development character/composition of the baseline will be fundamentally changed.
Medium	Medium term loss and/or local level change (greater than the Proposed Development footprint) or alteration to one or more key elements/features of the baseline conditions such that post development character/composition of the baseline condition will be materially changed.
Low	Short term, site specific and/or a minor shift away from baseline conditions. Changes arising from the alteration will be detectable but not material; the underlying character/composition of the baseline condition will be similar to the pre-development situation.
Negligible	Very little change from baseline conditions. Change is barely distinguishable, approximating to a “no change” situation.

Sensitivity of the Receptor

4.5.8 The sensitivity of a receptor or feature is characterised by the vulnerability to change, recoverability and importance of the receptor or feature (Table 4-4). Characterisation of the receptor is achieved by balancing out these three considerations to determine the receptor’s sensitivity.

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

Table 4-4: Sensitivity Criteria

Sensitivity	Description
High	Receptor has little or no ability to absorb change without fundamentally altering its character. For example: • Receptor has low/no capacity to return to baseline conditions within the Proposed Development life, e.g. low tolerance to change and low recoverability such as a physical feature formed over a geological time scale, or loss of access with no alternatives. • Receptor is economically valuable.
Medium	Receptor has moderate capacity to absorb change without significantly altering its character, however some damage to the receptor will occur. For example: • Receptor has intermediate tolerance to change.

Sensitivity	Description
	- Medium capacity to return to baseline condition, e.g. >5 of up to 10 years. - The receptor is valued but not protected.
Low	The receptor is tolerant to change without significant detriment to its character. Some minor damage to the receptor may occur. For example: - Receptor has high tolerance to change. - High capacity to return to baseline condition, e.g. within 1 year or up to 5 years. - May affect socio-economic behaviour but is not a nuisance to users. - The receptor is common and/or widespread.
Negligible	The receptor is tolerant to change with no effect on its character. The Project activity does not have a detectable effect on survival or viability.

Evaluating the Significance of Effect

4.5.9 Having established the magnitude of change and the sensitivity of the receptor the significance of the effect can be assessed. The identification of significance typically requires the application of professional judgement, however a significance matrix (Table 4-5) may also be used as a guide to help identify the likely significance of effects. Each of the specialist disciplines undertaking the environmental appraisal may have a variation of the table below that aligns with magnitude and sensitivity criteria that best suits their topic area, which may also be defined in industry guidelines. These criteria and determination of significance are outlined in the specialist chapters (Chapters 5-17) below.

Table 4-5: Significance Matrix

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

4.5.10 Further explanation of these significance levels is provided in Table 4-6.

Table 4-6: Significance Category Descriptions

Significance Category	Typical Description
Major (Significant)	A large and detrimental change to a valuable/sensitive receptor; likely or apparent exceeding of accepted (often legal) threshold. A large and beneficial change, whereby the improvements to the baseline were previously poor conditions is replaced by new legal compliance or a major contribution is made to national targets. These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features which are unique and which, if lost, cannot be replaced or relocated.
Moderate (Significant)	A medium scale change which, although not beyond an accepted threshold, is still considered to be generally unacceptable, unless balanced out by other

Significance Category	Typical Description
	significant positive benefits of a project. Likely to be in breach of planning policy, rather than legal statute. These effects, if adverse, are likely to be important at a local scale and on their own could have a material influence on decision making. A positive moderate effect is a medium scale change that is significant in that the baseline conditions are improved to the extent that guideline targets are contributed to.
Minor (Not significant)	A small change that, whilst adverse, does not exceed legal or guideline standards. Unlikely to breach of planning policy. A small positive change, but not one that is likely to be a key factor in the overall balance of issues. These effects may be raised as local issues and may be of relevance in the detailed design of the project but are unlikely to be critical in the decision making process.
Negligible (Not-significant)	A very small change that is so small and unimportant that it is considered acceptable to disregard. Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.

- 4.5.11 The result of the interpretation of this matrix in line with the approach defined by each discipline is the assignment of the level of significance of the effect for all potential impacts. This is done prior to any mitigation and re-evaluated following the incorporation of appropriate mitigation measures.

Approach to Mitigation

- 4.5.12 A standard hierarchical approach to identifying mitigation requirements should be used:
- **Avoid or Prevent:** In the first instance, mitigation should seek to avoid or prevent the adverse effect at source for example, by routeing the cables away from a sensitive receptor.
 - **Reduce:** If the effect is unavoidable, mitigation measures should be implemented which seek to reduce the significance of the effect.
 - **Offset:** If the effect can neither be avoided nor reduced, mitigation should seek to offset the effect through the implementation of compensatory mitigation.
- 4.5.13 Mitigation measures fall into two categories: 'Mitigation by Design' which form part of the Proposed Development; and 'Project Specific Mitigation' which is in addition to design commitments, and which are identified as a result of the assessment the Proposed Development:
- **Mitigation by Design:** The Proposed Development is being developed through an iterative process which involves seeking to avoid or reduce potential environmental effects through the appropriate siting of the Proposed Development infrastructure; and
 - **Project Specific Mitigation:** Project Specific Mitigation refers to measures which will be identified and proposed as a result of the assessment. These will be presented within each of the topic chapters. These will be identified to further avoid or reduce identified potentially adverse environmental effects where they cannot be in the design of the Proposed Development.

Evaluate and Assess Residual Significance

- 4.5.14 Following the identification of Project Specific Mitigation measures, the significance assessment will then be re-evaluated to determine whether there is likely to be a residual impact. When applied after mitigation, the resulting significance level is referred to as the residual significant effect.
- 4.5.15 Residual effects assessed as Moderate or Major after consideration of proposed mitigation measures would be classified as a Significant Effect.

Cumulative Effects

4.5.16 Schedule 4 Part 1 of the 2017 EIA Regulations (Ref 4-1) requires that the description of the likely significant effects should cover:

“the direct effects and any indirect, secondary, cumulative, trans-boundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.”

4.5.17 For the purpose of this ES cumulative effects have been defined under two categories; intra-project effects and inter-project effects. These two types of cumulative effects are explained below:

- Combined effects: The combined effects arising as a result of the Proposed Development upon a single receptor or resource. An example would be where a local resident is affected by dust, noise and a loss of visual amenity during the construction of the scheme, with the result being a greater nuisance than each individual effect alone; and
- Cumulative Effects: The combined effects of the Proposed Development with other relevant developments which may, on an individual basis result in no significant effects but, together (i.e., cumulatively), have a significant effect.

4.5.18 Refer to Volume V Chapter 23: Cumulative Effects of this ES for further details.

4.6 References

Ref 4-1 *HM Government (2017)*. The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 EIA Regulations. Available at:

<https://www.legislation.gov.uk/ukxi/2017/571/contents/made>

Ref 4-2 *AECOM (2023)*. TKRE Cable Tunnel Replacement Project Environmental Screening Report. Available at: <https://regs.thurrock.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=RVVPCRQG0YG00>

Ref 4-3 *IEMA (2004)*. Guidelines for Environmental Impact Assessment. Available at:

<https://www.gov.uk/guidance/environmental-impact-assessment>

Ref 4-4 *European Commission (1999)*. Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. Available at:

<https://tethys.pnnl.gov/sites/default/files/publications/European-Commission-1999.pdf>

Ref 4-5 *IEEM (2018)*. Guidelines for Ecological Impact Assessment in Britain and Ireland: Marine and Coastal. Available at: <https://cieem.net/wp-content/uploads/2018/08/ECIA-Guidelines-2018-Terrestrial-Freshwater-Coastal-and-Marine-V1.2-April-22-Compressed.pdf>

Ref 4-6 *Ofgem (2022)*. Accelerated Strategic Transmission Investment (ASTI) framework.

Available at: <https://www.ofgem.gov.uk/publications/decision-accelerating-onshore-electricity-transmission-investment>

4.7 Abbreviations

Abbreviation	Meaning
BMV	Best and Most Versatile
CEMP	Construction Environmental Management Plan
EIA	Environmental Impact Assessment
ES	Environmental Statement
IEMA	Environmental Management and Assessment
MMO	Marine Management Organisation
PRA	Preliminary Risk Assessment
SEC	Sealing End Compound
TKRE	Tilbury to Grain and Tilbury to Kingsnorth

