East Pye Solar

Environmental Statement

Volume 1: Chapter 2 – EIA Methodology

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2 Environmental Impact Assessment Methodology

2.1.1 This Chapter of the ES provides an overview of the Environmental Impact Assessment (EIA) process and general methodology. It is supported by the following figure included is **ES Volume 2:**

- **Figure 2.1**: **Cumulative Developments [EN0110014/APP/6.2.2.1]**

2.1.2 The Chapter is supported by the following appendices included in **ES Volume 3**:

- **Appendix 2.1: EIA Scoping Report [EN0110014/APP/6.3.2.1]**
- **Appendix 2.2: EIA Scoping Opinion [EN0110014/APP/6.3.2.2]**
- **Appendix 2.3: Legislation, Planning Policy and Guidance [EN0110014/APP/6.3.2.3]**
- **Appendix 2.4: Cumulative Schemes [EN0110014/APP/6.3.2.4]**

2.2 The EIA Process

2.2.1 EIA is the process of compiling, evaluating and presenting the likely significant environmental effects of a project and identifying measures to mitigate or manage any significant adverse effects.

2.2.2 The Environmental Statement (ES) must contain the information specified in Regulation 14(2) of the EIA Regulations (Ref 2-1) and must meet the requirements of Regulation 14(3) of the EIA Regulations. It must also include any additional information specified in Schedule 4 of the EIA Regulations which is relevant to the specific characteristics of the particular development or type of development and the environmental features likely to be significantly affected.

2.2.3 The key elements in EIA for a Nationally Significant Infrastructure Projects (NSIP) are:

- Iterative project design, taking feedback from consultation and applying it to the development design process on an ongoing basis throughout the EIA process;
- Scoping and ongoing consultation, including consideration of responses and how these should be addressed as part of the EIA;
- Technical environmental impact assessments, including baseline studies, input to the design process and identification of potential significant environmental effects;
- Consultation on the Preliminary Environmental Information Report (PEIR) which was published as part of the statutory consultation process; and

- Preparation and submission of the ES. Mitigation is to be proposed where available and appropriate to reduce or prevent likely significant adverse effects.

2.2.4 Each of the technical assessments follow a systematic approach with the principal steps being:

- Description of Baseline Conditions;
- Identification of appropriate embedded mitigation measures, including design changes;
- Assessment of likely significant effects;
- Identification of appropriate additional mitigation and enhancement measures where likely significant effects are identified;
- Assessment of residual environmental effects that remain following application of additional mitigation and enhancement measures; and
- Assessment of cumulative effects (including both inter and intra project effects) when considering the Scheme along with the potential effects of the Scheme and other identified developments.

2.3 Assessment Approach

2.3.1 The ES has been prepared to identify and evaluate the likely significant effects of the Scheme on the environment and to identify measures to mitigate or manage any significant negative effects. In turn this will help to ensure decision makers are able to make an informed judgement on the environmental impacts of the Scheme.

2.3.2 The ES has been prepared in accordance with the following:

- Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation (March 2025) (Ref 2-2);
- Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (March 2025) (Ref 2-3);
- Planning Inspectorate (PINS) Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements (March 2025) (Ref 2-4);
- PINS Advice Note Nine: Rochdale Envelope (March 2025) (Ref 2-5);
- Advice on Habitats Regulations Assessments (March 2025) (Ref 2-6);
- Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (March 2025) (Ref 2-3);
- Advice on the Water Framework Directive (March 2025) (Ref 2-7); and

- Institute of Environmental Management and Assessment (IEMA) Delivering Proportionate EIA (2017) (Ref 2-8).

2.4 EIA Scoping

2.4.1 The aim of the scoping process is to identify key environmental issues to determine the scope and likely significant effects of the Scheme on the environment. The scoping guides the establishment of survey extents and assessment requirements of the EIA.

2.4.2 The issues to be addressed within the ES were identified in the EIA Scoping Report **(ES: Appendix 2.1 EIA Scoping Report [EN0110014/APP/6.3.2.1])** as submitted to the Planning Inspectorate on 15 January 2025. The EIA Scoping Report concluded that several topics did not require a full chapter within the ES. The Planning Inspectorate reviewed and consulted on the EIA Scoping Report and adopted a Scoping Opinion on 25 February 2025, which included formal responses received from consultees.

2.4.3 In response to the Scoping Opinion, the EIA includes assessment of the following environmental topics:

- Chapter 6: Climate Change;
- Chapter 7: Landscape and Visual;
- Chapter 8: Ecology and Biodiversity;
- Chapter 9: Water Environment;
- Chapter 10: Cultural Heritage;
- Chapter 11: Transport and Access;
- Chapter 12: Noise and Vibration;
- Chapter 13: Air Quality;
- Chapter 14: Socio-Economics;
- Chapter 15: Soils and Agricultural Land;
- Chapter 16: Ground Conditions; and
- Chapter 17: Electromagnetic Fields.

2.4.4 The proportional approach described in the EIA Scoping Report was mostly accepted by the Planning Inspectorate within the Scoping Opinion. These topics are presented in **ES Chapter 18: Other Environmental Matters [EN0110014/APP/6.1.18]** which includes:

- Major Accidents and Disasters;
- Telecommunications, Utilities and Television;
- Glint and Glare;
- Waste and Materials; and
- Human Health.

2.4.5 The inclusion of **ES: Chapter 18 Other Environmental Matters [EN0110014/APP/6.1.18]** in addition to **ES: Chapter 6 to Chapter 18 [EN0110014/APP/6.1.6 – 6.1.18]** ensures the EIA meets paragraph 4 Schedule 4 of the EIA Regulations, which states that the ES should include:

'*a description of the factors […] likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.*'

2.5 Environmental Statement

2.5.1 The ES presents the outcomes of the EIA which includes the following:

- Establishing Baseline Conditions;
- Consultation with statutory and non-statutory consultees;
- Consideration of the relevant local, regional and national planning policies, guidelines and legislation relevant to the EIA;
- Consideration of technical standards for the development of effect significance criteria and specialist assessment methodologies;
- Identification of effects, design review and design change to reduce environmental effects;
- Review of secondary information, previous environmental studies, publicly available information and databases;
- Physical surveys and monitoring;
- Desktop studies;
- Modelling and calculations, where the design is suitably well developed and/or sufficient data are available;
- Reporting of effects following implementation of mitigation;
- Production of construction, operation and decommissioning phase outline plans to secure the mitigation; and
- Reference to current guidance.

2.5.2 Technical assessments have been undertaken for each environmental topic of the EIA as presented in **ES: Chapter 6 to Chapter 18 [EN0110014/APP/6.1.6 – 6.1.18]**. Each technical assessment within the ES follows the sub-headings explained in **Table 2.1**.

Table 2.1: Technical Chapter Format and Content

ES Chapter Sub-Heading	Context
Introduction	This section introduces the assessment discipline and the purpose for which it is being undertaken, as well as a summary of legislation and policy.
Assessment Methodology	This section provides an explanation of methods used in undertaking the technical study with reference to published standards, guidelines, and best practice. The application of significance criteria is outlined. It also outlines any difficulties encountered in compiling the required information. It outlines the assumptions and limitations associated with the assessment.
Baseline Conditions	This section includes a description of the environment as it is currently (between 2024 and/or 2025) and as it is expected to change if the Scheme were not to proceed (called the future baseline). The method used to obtain baseline information is identified. Baseline data has been collected in such a way that the importance of the subject area to be affected can be placed in its context and surroundings so that the effects of the proposed changes can be predicted.
Embedded Mitigation	This section explains the extent of embedded mitigation measures and how these will be effective and set out within each technical chapter. Where the effectiveness is uncertain or depends upon assumptions about operating procedures, data will be provided to justify the assumptions, and monitoring programmes will be proposed, where necessary, to enable subsequent adjustment of mitigation measures as necessary.
Assessment of Likely Significant Effects	This section identifies the likely significant effects on the environment resulting from the construction, operation (including maintenance) and decommissioning phases of the Scheme. This assessment of magnitude, sensitivity and significance of effects takes embedded mitigation into account as an integral part of the Scheme.
Additional Mitigation Measures	Where there are adverse effects anticipated despite the embedded mitigation, additional and specific mitigation measures are put forward to seek to minimise or reduce those adverse effects, where practicable. Additional mitigation measures considered may be: • actions that require further activity to achieve a particular outcome, secured for example through development consent requirements, such as lighting limits, that will be subject to the submission of a detailed lighting layout for approval; and • actions that include enhancement measures which improve the environment beyond standard mitigation measures.
Residual Effects	Likely residual effects of the Scheme assume the implementation of proposed additional mitigation, will be determined. The residual effects represent the overall likely significant effects of the Scheme on the environment having taken account of practicable/available mitigation measures and are set out in **ES: Chapter 20 Summary of Residual Significant Effects [EN0110014/APP/6.1.20].**
Cumulative Effects	Cumulative effects are described in Schedule 4, paragraph 5(2) of the EIA Regulations as: '*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*'. In-combination effects between the effects identified for the Scheme which, when taken together, create a combined effect on one or more receptors is presented separately in **ES: Chapter 19 In-Combination Effects [EN0110014/APP/6.1.19]**.
Summary	A summary of the likely residual effects is provided at the end of each Chapter.

2.6 Rochdale Envelope

2.6.1 Advice Note Nine 'Rochdale Envelope' was published by PINS in July 2018 (Ref 2-5) to address the degree of flexibility that would be considered appropriate to deal with uncertainties associated with applications for development consent.

2.6.2 The ES adopts the Rochdale Envelope approach to maintain flexibility in the design and layout of the Scheme in the DCO Application, to address uncertainties as identified in the ES, and to allow for advancements in technology from now to the time of construction. Not all technical details have been determined at this stage and will not be until after the granting of the Development Consent Order (DCO). This is important as the technology for solar photovoltaic (PV) and Battery Energy Storage Systems (BESS) continues to evolve. Therefore, maintaining flexibility to meet the changing demands of the UK market prior to Scheme construction enables the Applicant to adopt the most up to date technology at the point of commencement of development.

2.6.3 This is also aligned with the Rochdale Envelope which ensures a robust assessment of the likely significant environmental effects of the Scheme. All technical chapters will determine and assess the maximum parameters where flexibility needs to be retained as under the Rochdale Envelope approach. The approach to the Rochdale Envelope is described further in **ES: Chapter 4 The Scheme [EN0110014/APP/6.1.4]** and involves specifying outline parameters. These parameters will be considered in the ES to make sure a realistic worst-case assessment of the Scheme is undertaken.

2.6.4 Additionally, Paragraph 4.3.18 of National Policy Statement EN-1 (Ref 2-9) states '*the Secretary of State should consider the worst-case impacts in its consideration of the application and consent, providing some flexibility in the consent to account for uncertainties in specific project details*'.

2.6.5 Therefore, as is relevant for each technical discipline, the maximum (and where relevant, minimum) parameters for the elements where flexibility needs to be retained have been assessed under the Rochdale Envelope approach. The approach also recognises that the worst-case parameter for one technical assessment may differ from another, ensuring that worst case overall impacts are predicted. Each technical chapter describes the parameters applied in relation to the relevant assessment.

2.7 Spatial Scope

2.7.1 The technical chapters of the ES (**ES: Chapter 6 to Chapter 18 [EN0110014/APP/6.1.6 – 6.1.18]**) describe the spatial scope, including the rationale for determining the specific area within which the assessment is focussed. The Study Areas are a function of the nature of the impacts and the locations of environmental resources or receptors. Justification of spatial scope is detailed in each technical chapter and is defined as the Study Area, where appropriate.

2.8 Temporal Scope

Construction Phase Effects

2.8.1 For purposes of the assessment, the construction phase effects may result from activities during site preparation, enabling works and also construction and commissioning activities. This covers sources of effects such as construction traffic, construction activity noise and vibration, dust generation, site runoff, mud on roads, risk of fuel and oil spillage and the visual intrusion of plant and machinery on Site. The duration of construction-related effects will be different for different activities. For example, impacts related to earth moving are likely to be short in duration compared with the construction of energy infrastructure or landscaping activities.

Operational and Maintenance Phase Effects

2.8.2 Operation and maintenance effects are those that are associated with operation and maintenance activities during the generating lifetime of the Scheme, which is anticipated to be up to 60 years. Timescales associated with these effects are as follows:

- Short term – endures for up to 12 months;
- Medium term – endures for 1 to 5 years;
- Long term – endures for more than 5 years;
- Reversible long-term effects – long-term effects, which endure throughout the 60 year operational lifetime of the Scheme, but which cease once the Scheme has been decommissioned; and
- Permanent effects – effects which cannot be reversed following decommissioning.

2.8.3 This will include activities relating to maintenance and replacement of solar PV panels and BESS. Replacement rates are detailed in **ES: Chapter 4 The Scheme [EN0110014/APP/6.1.4]**.

Decommissioning Phase Effects

2.8.4 Decommissioning effects are changes resulting from activities beginning and during the decommissioning phase. This covers sources of effects such as decommissioning site traffic, decommissioning activity creating noise and vibration, dust generation, mud on roads, risk of fuel and oil spillage and the visual intrusion of plant and machinery. Typically, decommissioning phase effects are similar in nature to the construction phase, although may be of different duration and of less intensity.

Assessment Years

2.8.5 The assessment considers the environmental impacts of the Scheme at key stages in its construction and operation and maintenance phases and, as far as practicable, its decommissioning phase. The 'existing baseline' year for the ES will either be 2024 to 2025 since this is the period in which the baseline studies for the EIA has been undertaken. Where relevant, 'future baseline' conditions are also predicted for each assessment scenario, whereby the conditions anticipated to prevail at a certain point in the future (assuming the Scheme does not progress) are identified for comparison with the predicted conditions with the Scheme. This can include the introduction of new receptors and resources into an area, or new development schemes that have the potential to change the baseline.

2.8.6 The assessment scenarios that are being considered for the purposes of the EIA and considered in the ES are as follows:

- Existing baseline 2024 to 2025. This is the principal baseline against which environmental effects will be assessed;
- Future baseline (no development) in 2028 – 2030, which are the expected scheme construction years;
- Construction in 2028-2030. The peak construction year for the purpose of the EIA is anticipated to be 2029. This assumes commencement of construction in 2028 and that the Scheme is built out over a 24-month period. This is a likely worst case for traffic generation because it compresses the trip numbers into a shorter duration and represents the greatest impact on the highway network. A lengthened construction phase would spread out the trip numbers over a longer duration, likely resulting in lower traffic at any one point in time, and consequently lower air quality and noise impacts and, therefore, the likely worst-case scenario has been assessed within the ES. Where a compressed construction phase does not represent the worst case for some topics, this is discussed in the relevant technical chapter to ensure that worst case effects scenarios for those topics have been determined;
- Operation and maintenance in 2031. This is expected to be the earliest date that the Scheme can be fully built out and operational; and
- Decommissioning in 2091. This would be the earliest year that decommissioning would commence based on the anticipated 60 year design life of the Scheme. Decommissioning is expected to take between 12 and 24 months and would be undertaken in phases.

2.8.7 A future year of 2045 is also considered for some specific topics to take account of the maturation of vegetation (i.e. 15 years after the operational assessment year), such as in the landscape and visual assessment.

2.9 Determining the Baseline Conditions

2.9.1 To predict the potential environmental effects of the Scheme, it is a necessary step of the EIA to determine the environmental conditions that currently exist within the Order Limits and the surrounding area in the absence of the Scheme. This is referred to as Baseline Conditions.

2.9.2 Detailed environmental baseline information has been collected and the methodology for this collection process is detailed within each technical chapter. Baseline information has been collected through field and desk-based studies, including:

- Online/digital resources;
- Data searches, e.g. Local Biological Record Centres, Historic Environment record, etc.
- Baseline surveys; and
- Available environmental information submitted for other planning applications in the vicinity of the Site.

2.10 Design Development, Impact Avoidance and Mitigation

2.10.1 Regulation 14, Paragraph (2)(c) of the EIA Regulations (Ref 2-1) requires the ES to provide '*a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment*'. These are commonly referred to as mitigation measures.

2.10.2 In accordance with Regulation 14, mitigation measures related to the design secured through a DCO Requirement are considered to be embedded into the Scheme. Consequently, embedded measures are included within the assessment of likely significant effects.

2.10.3 Mitigation has been developed in accordance with the mitigation hierarchy as set out below:

- **Avoid or prevent**: in the first instance, mitigation will seek to avoid or prevent the adverse effect at source, for example, by routeing the Cable Route Corridor or siting the Solar PV Panels away from sensitive receptors;
- **Reduce**: if the effect is unavoidable, mitigation measures will be implemented which seek to reduce the significance of the effect, for example, the use of a noise barriers to reduce construction noise at nearby noise sensitive receptors; and
- **Offset**: if the effect can neither be avoided nor reduced, mitigation will seek to offset the effect through the implementation of compensatory mitigation, for example, habitat creation to replace any habitat losses.

Embedded Mitigation

2.10.4 The design process continues to evolve based on the findings of the environmental surveys and assessment and engagement with key stakeholders and public consultations. Measures have already been embedded within the design and will be secured via the DCO. Embedded mitigation measures within the design of the Scheme include:

- Exclusion areas;
- Offsets and buffers; and
- Considered placement of infrastructure to avoid environmental resources.

2.10.5 Management plans are typically submitted as part of the DCO application to secure the implementation of mitigation measures. These are often submitted in outline form so that more detailed information can be developed and determined with consultees and PINS.

2.10.6 The assessment presented in the ES been undertaken on the basis that these embedded mitigations are incorporated into the design and construction, operation and maintenance, and decommissioning practices.

2.10.7 Embedded mitigation measures relevant to the construction, operation decommissioning phases will be described within outline management plans and secured by DCO Requirements such as the **Outline Construction Environmental Management Plan (CEMP) [EN0110014/APP/7.1]** and **Outline Operational Environmental Management Plan (OEMP) [EN0110014/APP/7.2]**. Further details of the embedded measures are set out in **ES: Chapter 4 The Scheme [EN0110014/APP/6.1.4]**.

Additional Mitigation

2.10.8 Where likely significant effects are identified as part of the assessment, consideration has been given to any 'additional mitigation' over and above the embedded mitigation that may be required to mitigate any significant adverse effects.

2.10.9 Additional mitigation measures are reported to reduce or mitigate likely significant effects resulting from the Scheme, where possible. Measures could include, for example, provision of acoustic enclosures; or additional planting and hedgerow improvements to reduce adverse visual impacts; or monitoring measures which may trigger additional remedial action to be implemented. The technical chapter also explains how the additional mitigation will be secured, for example via a specific DCO requirement or via a management plan, or document secured by a DCO requirement.

2.10.10 The residual effects (i.e. effects after the implementation of mitigation) have been identified and are presented in each technical chapter. Significant residual effects are also set out in **ES: Chapter 20 Summary of Residual Significant Effects [EN0110014/APP/6.1.20]**.

Monitoring

2.10.11 Regulation 21(3)(a) of the EIA Regulations (Ref 2-1) requires the Secretary of State to consider whether it is appropriate to impose a 'monitoring measure' which is a *'provision requiring the monitoring of any significant adverse effects on the environment'.* The ES will specify which effects, if any, will require monitoring, and the mechanism by which they will be monitored.

Enhancement

2.10.12 Where relevant, enhancement measures have also been identified. Enhancement measures are not required to mitigate significant effects and are not factored into the determination of residual effects. They are further measures which would have additional beneficial outcomes should they be implemented.

2.11 Effect Significance Criteria

2.11.1 The overall environmental acceptability of the Scheme is a matter for the Secretary of State to determine, having considered, amongst other matters, the environmental information that is set out in the ES with the DCO Application, including all likely beneficial and adverse environmental effects. The ES will set out environmental information and will present the likely significant effects of the Scheme on each topic scoped into the EIA, taking into account mitigation and enhancement measures.

2.11.2 The evaluation of the significance of an effect is important as it is the significance that determines the resources that should be deployed in avoiding or mitigating a significant adverse effect; or, conversely, the actual value of a beneficial effect. Each chapter of the ES will ascribe significance to effects for the construction, operation and decommissioning phases of the Scheme, where relevant.

2.11.3 The significance of likely residual effects (that is, effects that remain post-mitigation) will be determined by reference to criteria for each assessment topic. Specific significance criteria for each technical discipline will be developed, giving due regard to the following:

- Sensitivity of the receptor (described as High, Medium, Low, Very Low);
- Extent and magnitude of the impact (i.e. the magnitude of change from the baseline condition) (described as High, Medium, Low, Very Low);
- Effect duration and whether effects are temporary, reversible or permanent; and
- Effect nature (whether direct or indirect, reversible or irreversible, beneficial or adverse).

2.11.4 The sensitivity of a receptor is based on the relative importance of the receptor using the scale set out in **Table 2.2**.

Table 2.2: Methodology for Assessing Sensitivity

Sensitivity	Examples of Receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character, or the receptor/resource is of international or national importance.
Medium	The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or the receptor/resource is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character, or the receptor/resource is of low or local importance.
Very Low	The receptor/resource is tolerant of change without detriment to its character, or the receptor/resource does not make a significant contribution to local character or distinctiveness and is not designated.

2.11.5 The methodology for determining the scale or magnitude of impact is set out in **Table 2.3** below.

Table 2.3: Methodology for Assessing Magnitude of Impact

Magnitude of Impact	Criteria for Assessing Impact
High	Total loss or major/substantial alteration to key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed.
Medium	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed.
Low	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The underlying character/composition/attributes of the baseline condition will be similar to the pre-development circumstances/situation.
Very Low	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.

2.11.6 Each chapter of the ES details the sensitivity and magnitude of impact, based on quantitative data, where possible, and accepted criteria specific to their topic, together with the use of value judgment and expert interpretation to establish to what extent an effect is environmentally significant.

2.11.7 After the sensitivity of the receptor/resource and the magnitude of the impact have been determined, the effect significance is classified using the matrix in **Table 2.4**. This illustrates the interaction between magnitude of impact and receptor sensitivity.

Table 2.4: Effect Significance Matrix

Magnitude	Sensitivity			
	High	Medium	Low	Very Low
High	Major Adverse / Beneficial	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial
Medium	Major Adverse / Beneficial	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible

Magnitude	Sensitivity			
	High	Medium	Low	Very Low
Low	Moderate Adverse / Beneficial	Minor Adverse / Beneficial	Negligible	Negligible
Very Low	Minor Adverse / Beneficial	Negligible	Negligible	Negligible

2.11.8 **Table 2.5** below provides generic definitions of the terminology used to categorise effects.

Table 2.5: Significance of Effect Definitions

Effect	Description
Major	An effect that is likely to be an important consideration at a national to regional level because it will contribute to achieving national/regional objectives or is likely to result in exceedance of statutory objectives or breaches of legislation.
Moderate	An effect that is likely to be an important consideration at a regional level.
Minor	An effect that is likely to be an important consideration at a local level.
Negligible	An effect that is likely to have a negligible or neutral influence, irrespective of other effects.

2.11.9 As far as is practicable at this stage, the significance of effects identified are stated in the ES. As a general rule, **Major** and **Moderate** effects are considered to be **Significant** in EIA terms, whilst **Minor** and **Negligible** effects are considered to be **Not Significant** in EIA terms. However, professional judgement has also been applied and may adjust the significance of an effect where necessary, considering the professional's understanding of the balance between the magnitude of an impact and the sensitivity of the receptor/resource and whether the effect is permanent or temporary, its frequency, whether it's reversible, and likelihood of occurrence.

2.12 Cumulative and In-Combination Effects

2.12.1 An assessment of cumulative effects of the Scheme and cumulative schemes (as shown in **ES: Figure 2.1, Cumulative Developments [EN0110014/APP/6.2.2.1]**) is assessed within **ES Chapters 6 – 18 [EN0110014/APP/6.1.6 – 6.1.18]**). A summary is also provided in **ES: Appendix 2.4 Cumulative Schemes [EN0110014/APP/6.3.2.4]**.

2.12.2 Paragraph (5) of Schedule 4 of the EIA Regulations (Ref 2-1) state that a description of likely significant effects of the development should be included resulting from:

'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'

2.12.3 For the cumulative impact assessment presented in the ES, two types of effect are considered:

- Cumulative Effects: the combined effects of other development scheme(s) which may interact cumulatively with the Scheme. The effects of these schemes may be insignificant on an individual basis, but cumulatively with the Scheme have a new or different likely significant effect (these are referred to as 'cumulative effects'); and

- In-Combination effects: the combined effect of individual impacts from the Scheme, for example, where a single receptor is affected by noise and traffic disruption during the construction of the Scheme.

2.12.4 The assessment is based on the data available from other proposed and committed developments and associated information which is currently in the public domain. The assessment of in-combination effects is presented in **ES: Chapter 19 In-Combination Effects Assessment [EN0110014/APP/6.1.19]**

2.12.5 The cumulative effects assessment of the ES will be undertaken in line with the EIA Regulations and the PINS Advice on Cumulative Assessment (Ref 2-3).

Cumulative Effects

2.12.6 The best practice approach to the assessment of cumulative effects also requires inclusion of proportionate information relating to cumulative schemes that are not yet consented, dependent on the level of certainty of them coming forward. In this regard, the PINS Advice on Cumulative Effects Assessment relevant to nationally significant infrastructure projects (Ref 2-3) is relevant to this ES.

2.12.7 The methodology for the assessment follows a four-stage approach:

- Stage 1 – Establishing the long list;
- Stage 2 – Establishing a shortlist;
- Stage 3 – Information Gathering; and
- Stage 4 – Assessment.

Stage 1 – Establishing the Long List

2.12.8 The assessment of cumulative effects is based on the methodology described in **ES: Chapter 2 EIA Methodology [EN0110014/APP/6.1.2]**. This methodology has been developed in accordance with Planning Inspectorate advice on cumulative effects assessment (Ref 2-3) on the assessment of cumulative effects. A four-stage approach has been adopted for this assessment:

- Stage 1 – Establishing the long list of 'other existing development and/or approved development'
- Stage 2 – Establishing a shortlist of 'other existing development and/or approved development'
- Stage 3 – Information gathering; and

- Stage 4 – Assessment.

2.12.9 PINS guidance provides three tiers to assign to the cumulative schemes identified on the long list, as set out in **Table 2.6** below. These tiers are based on the level of certainty of an identified development coming forward or being built out, and the level of published detail for the cumulative schemes at the time of the assessment.

Table 2.6: Categories of Certainty for Cumulative Schemes

Tier	Comments
Tier 1 (most certain)	• Under construction; • Permitted application(s), whether under the Planning Act 2008 or other regimes, but not yet implemented; • Submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined; • All refusals subject to appeal procedures not yet determined.
Tier 2	• Projects on the PINS Programme of Projects (where a scoping report has been submitted).
Tier 3 (least certain)	• Projects on the PINS Programme of Projects where a scoping report has not been submitted. • Identified in the relevant Development Plan and emerging Development Plans – with appropriate weight being given as they move closer to adoption, recognising that there will be limited information available on the relevant proposals. • Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

Stage 2 – Establishing a Short List

2.12.10 At Stage 2, threshold criteria are reviewed against the long list to establish the short list, utilising Matrix 1 of Annex 1 of the PINS advice on Cumulative Effects Assessment (Ref 2-3). Applying this method will make sure that only cumulative schemes which are likely to result in significant cumulative effects is taken forward to the assessment stage, with a view to only assessing developments that fall within the zone of influence for a particular environmental topic.

Stage 3 – Information Gathering

2.12.11 Information relating to cumulative schemes has been collected from the appropriate source (including the local planning authorities and PINS websites) and includes:

- Development design;
- Location;
- Programme of construction, operational and decommissioning phases; and
- Environmental assessment of the cumulative scheme.

Stage 4 - Assessment

2.12.12 The assessment has been undertaken using the cumulative schemes that have been identified in Stages 1 to 3. Some assessments may inherently be cumulative, in which case no additional cumulative assessment of these topics is required.

2.12.13 This cumulative assessment has been updated from the PEIR, following design evolution of the Scheme and the establishment of the short list of cumulative schemes. The criteria for determining the significance of cumulative effects will be based upon:

- The duration of effect; that is, will it be temporary or permanent;
- The extent of effect: e.g. the geographical area of an effect;
- The type of effect; e.g. whether additive or synergistic;
- The frequency of the effect;
- The 'value' and resilience of the receptor affected; and
- The likely success of mitigation.

2.12.14 No transboundary effects have been identified as arising from the Scheme. However, if any are identified, they will be considered in accordance with PINS Advice 'Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process' (Ref 2-13).

In-Combination Effects

2.12.15 A range of public sector and industry-led guidance is available on the approach to assessing and quantifying in-combination effects that lead to combined effects on sensitive receptors, but at present there is no single, agreed industry standard method. The European Commission (EC) has produced guidelines for assessing in-combination effects which '*are not intended to be formal or prescriptive but are designed to assist EIA practitioners in developing an approach which is appropriate to a project […]*' (Ref 2-14)

2.12.16 The Applicant has reviewed these guidelines and has developed an approach which uses the defined residual effects of the Scheme to determine the potential for effect interactions to lead to combined effects.

2.12.17 The assessment of in-combination effects of the Scheme is provided in **ES Chapter 19 – In-Combination Effects Assessment [EN011114/APP/6.1.19]**. A detailed and updated in-combination assessment will be presented in the ES. The assessment of in-combination effects has been undertaken using a two-staged approach, outlined below.

Stage 1 – Screening

2.12.18 Screening is undertaken to identify 'receptor groups' based on whether a sensitive receptor (as identified within **ES: Chapter 6 to Chapter 18 [EN0110014/APP/6.1.6 – 6.1.18]**) is exposed to more than one type of residual effect during the construction, operation and decommissioning phases of the Scheme. Those sensitive receptors that could experience two or more types of residual effects (post-mitigation), with significance of 'minor' or greater, are taken forward to Stage 2 of the assessment.

2.12.19 The term 'receptor group' is used to highlight that the approach taken for the in-combination effects assessment does not assess every individual receptor, but rather potentially sensitive groups of receptors identified through the EIA process. Only receptors that are expected to incur more than one potential effect have been included in the assessment (e.g. noise and dust).

2.12.20 If there is only one type of effect on a sensitive receptor, then it will be considered that there are no potential in-combination effects and the sensitive receptor will not be taken forward to Stage 2 of the assessment.

Stage 2 – Assessment of In-Combination Effects

2.12.21 Where likely in-combination effects are identified at Stage 1, these are assessed based on information provided in the chapters of the ES and supporting appendices. As this assessment compares both qualitative and quantitative assessment outcomes, professional judgement is applied to determining the significance of each in-combination effect identified.

2.12.22 The evaluation at the receptor level will consider: the magnitude of impact at the common receptor; previously-identified sensitivity; and duration and reversibility of interaction. The focus will be on determining a change in the level of effect likely to be experienced and whether this is significant or not.

2.13 Consideration of Alternatives

2.13.1 If the developer has considered reasonable alternatives, they should describe them within the ES; and the main reasons for selecting the chosen option in accordance with paragraph 2 of Schedule 4 to the EIA Regulations (Ref 2-1):

'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.'

2.13.2 Regulation 14(2)(d) of the EIA Regulations (Ref 2-1) also requires that the ES should include:

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

2.13.3 PINS Advice Note 7 (Ref 2-3) states that a good ES is one that *'explains the reasonable alternatives considered and the reasons for the chosen option taking into account the effects of the Proposed Development on the environment'.*

2.13.4 The design process has been heavily influenced by the findings of early environmental appraisals and the EIA process. The Scheme has had several measures incorporated into the design to avoid or minimise environmental impacts, for example, through the appropriate routing and siting of infrastructure to avoid designated sensitive areas. These elements of design evolution include measures needed for legal compliance, as well as measures that implement the requirements of good practice guidance documents.

2.13.5 **ES: Chapter 5 Reasonable Alternatives and Design Evolution [EN0110014/APP/6.1.5]** includes a summary of the approach to Site selection, reasonable alternatives and design evolution of the Scheme to date in accordance with the relevant legislative and policy tests.

References

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Ref 2-2 The Planning Inspectorate (2025) *Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation.* Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-eia-notification-and-consultation

Ref 2-3 The Planning Inspectorate (2024) *Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment.* Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment

Ref 2-4 The Planning Inspectorate (2025) *Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements.* Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/

Ref 2-5 The Planning Inspectorate (2018) *Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope.* Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope

Ref 2-6 The Planning Inspectorate (2024) *Nationally Significant Infrastructure Projects - Advice on Habitats Regulations Assessments.* Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/

Ref 2-7 The Planning Inspectorate (2024) *Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive* Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18

Ref 2-8 The Institute of Sustainability and Environmental Professionals (ISEP) (formerly IEMA) (2017) *Delivering Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice* Available at: https://www.iema.net/media/zi2e44qq/delivering-proportionate-eia.pdf

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Ref 2-10 South Norfolk and Broadland District Council (n.d.) *Find a Planning Application.* Available at:

https://www.southnorfolkandbroadland.gov.uk/planning/planning-applications/find-planning-application

Ref 2-11 Norfolk County Council (n.d.) *Find a Planning Application*. Available at: https://www.norfolk.gov.uk/article/38622/Find-a-planning-application

Ref 2-12 The Planning Inspectorate (n.d.) Project Search – National Infrastructure Consenting. Available at: https://national-infrastructure consenting.planninginspectorate.gov.uk/project-search

Ref 2-13 The Planning Inspectorate (2024) *Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process*. Available at https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-transboundary-impacts-and-process

Ref 2-14 European Commission (1999) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions. Available at: https://wayback.archive-it.org/12090/20151221014945/http:/ec.europa.eu/environment/archives/eia/eia-studies-and-reports/pdf/guidel.pdf >