POWER FOR GOOD

Steeple Renewables Project

Chapter 2: Environmental Impact Assessment Methodology and Public Consultation

Environmental Statement - Volume 1

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Chapter 2: Environmental Impact Assessment Methodology and Public Consultation

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2. Environmental Impact Assessment Methodology

2.1 Introduction

2.1.1 This chapter of the Environmental Statement (ES) sets out the approach taken to the Environmental Impact Assessment (EIA) process to date, explaining the methodology used to prepare the technical chapters of this ES and describes its structure and content. In particular, it sets out the process of identifying and assessing the likely significant environmental effects of the Proposed Development. This chapter also includes details of the consultation undertaken and the overall approach to the assessment of the effects of the Proposed Development.

2.1.2 Further details of technical chapter specific methodologies, such as survey methods, are provided in the relevant ES technical chapters (**Chapters 6 – 17 [EN010163/APP/6.2.6 - EN010163/APP/6.2.17]**).

2.1.3 The key elements in EIA for a Nationally Significant Infrastructure Project (NSIP)[1] are:

- Iterative project design, taking feedback from consultation and environmental studies and applying feedback to the design development process on an ongoing basis throughout the EIA;
- Scoping and ongoing consultation, including consideration of responses and how these are addressed as part of the EIA;
- Technical environmental impact assessments, including baseline studies, input to the design process, refinement of the design, and identification and reporting of residual environmental effects;
- Consultation on the Preliminary Environmental Information Report (PEIR); and
- Preparation and submission of the ES. Mitigation is identified to reduce or prevent likely significant adverse effects.

2.2 Scope of the Environmental Impact Assessment

2.2.1 Scoping is the process of identifying the environmental topics that will require detailed assessment within the EIA (establishing the scope of the assessment).

[1] Summarised from PINS (2025) NSIP – Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements

Scoping is therefore an important preliminary procedure, which sets the context for the EIA process. Through scoping, the key environmental issues of concern are identified at an early stage, which permits subsequent work to concentrate on those environmental topics for which significant effects may arise as a result of a development proposed on a site.

2.2.2 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017[2] (hereafter referred to as the "EIA Regulations"), allow an applicant to request that the Planning Inspectorate (PINS) (on behalf of the Secretary of State (SoS) sets out its opinion (known as a Scoping Opinion) as to the issues to be addressed in the EIA process.

2.2.3 On 23rd April 2024, the Applicant submitted a Scoping Report to PINS, which described the scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects and, where necessary, to determine suitable mitigation measures for the construction, operation, and decommissioning phases of the Proposed Development. It also described those topics or sub-topics which are proposed to be scoped out of the EIA and provided justification as to why the Proposed Development would not have the potential to give rise to significant environmental effects (see **Appendix 1.1 – Steeple Renewables Project Scoping Report [EN010163/APP/6.3.1]**).

2.2.4 Subsequent to the submission of the Scoping Report, PINS consulted with statutory bodies and on behalf of the Secretary of State provided a Scoping Opinion on the 3rd June 2024 (see **Appendix 1.2 – Steeple Renewables EIA Scoping Opinion [EN010163/APP/6.3.1]**). The ES has also considered the EIA Scoping Response provided by the Environment Agency (see **Appendix 1.3 – Environment Agency EIA Scoping Response [EN010163/APP/6.3.1]**) which did not form part of the SoS's EIA Scoping Opinion.

2.2.5 Within technical chapters in the ES, key issues raised in the Scoping Opinion provided by PINS are set out and responses provided on how and where the ES or other DCO application documentation address these points.

[2] HMSO (2017) The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

Topics Scoped into the ES

2.2.6 Table 2.1 summarises the scope of the EIA process in the context of the requirements of Regulation 14(2) of the EIA Regulations. The environmental themes scoped into this ES are included in Table 2.1.

Table 2. 1: Summary of the Requirements of the ES (Regulation 14(2) of the EIA Regulations)

Required Information	Location within the ES
(a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development;	• **Chapter 3: Site Description, Site Selection and Iterative Design Process [EN010163/APP/6.2.3]**; and • **Chapter 4: The Proposed Development [EN010163/APP/6.2.4]**
(b) a description of the likely significant effects of the proposed development on the environment;	• **Chapter 3: Site Description, Site Selection and Iterative Design Process[EN010163/APP/6.2.3] ;** • **Chapter 4: The Proposed Development [EN010163/APP/6.2.4];** • **Chapter 6: Landscape and Visual Impact and Residential Amenity [EN010163/APP/6.2.6];** • **Chapter 7: Ecology and Biodiversity [EN010163/APP/6.2.7];** • **Chapter 8: Hydrology, Hydrogeology, Flood Risk and Drainage [EN010163/APP/6.2.8];** • **Chapter 9: Cultural Heritage [EN010163/APP/6.2.9];**
(c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment	

Required Information	Location within the ES
	• **Chapter 10: Socio-Economics [EN010163/APP/6.2.10];** • **Chapter 11: Noise and Vibration [EN010163/APP/6.2.11] ;** • **Chapter 12: Climate Change [EN010163/APP/6.2.12] ;** • **Chapter 13: Transport and Access [EN010163/APP/6.2.13];** • **Chapter 14: Air Quality [EN010163/APP/6.2.14];** • **Chapter 15: Land Use and Agriculture [EN010163/APP/6.2.15];** • **Chapter 16: Glint and Glare [EN010163/APP/6.2.16];** and • **Chapter 17: Miscellaneous Issues [EN010163/APP/6.2.17].** Cumulative effects and in-combination effects on the above factors are assessed under each environmental topic chapter under the headline 'Cumulative and Interactive Effects'
(d) a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment;	**Chapter 3: Site Description, Site Selection and Iterative Design Process** **[EN010163/APP/6.2.3]**

Required Information	Location within the ES
(e) a non-technical summary of the information referred to in subparagraphs (a) to (d); and	**Non-Technical Summary [EN010163/APP/6.1]**
(f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.	**Appendix 2.1 - Schedule 4 Requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 [EN010163/APP/6.3.2]**

Topics Scoped out of the ES

2.2.7 The EIA Scoping Report (**Appendix 1.1 – Steeple Renewables Project EIA Scoping Report [EN010163/APP/6.3.1]**) proposed that several topics are not likely to cause significant effects, therefore not requiring a full chapter within this ES, in which PINS agreed on 3rd June 2024 via the formally adopted Scoping Opinion (see **Appendix 1.2 – Steeple Renewables Project EIA Scoping Opinion [EN010163/APP/6.3.1]**. Table 2.2 summarises why those environmental themes are scoped out of the ES.

Table.2.2 Environmental Topics Scoped out of the EIA

Environmental Topic	Reason for Scoping Out
Ground Conditions/Contamination	There is no history of significant contaminative processes on the Site nor have activities taken place that would be a high risk to unknown soil contamination; the majority of the Site has been in agricultural use. Therefore, there is no reason to expect any form of land contamination. The land grade and soil structure of the Site has been considered and is contained within **Chapter 15 - Land Use and Agriculture [EN010163/APP/6.2.15]**. Through the EIA Scoping process, PINS had set out that without a Phase 1 Contaminated Land report, it cannot be assumed that there is no soil

Environmental Topic	Reason for Scoping Out
	contamination on the Site. Accordingly, the evidence of contaminants on the Site has been set out in **Appendix 2.2 - Phase 1 Geoenvironmental Desk Study Report [EN010163/APP/6.3.2].** In summary, the **Phase 1 Geoenvironmental Desk Study Report [EN010163/APP/6.3.2]** sets out the site history as predominantly arable farmland with no significant changes over period. There are no geologic faults onsite, and the Site is not affected by coal mining, brine or other mineral extraction. There are no active or recent landfill sites within 500m of the Site, nor are there any waste transfer sites within 500m. Any made ground, infilled ground and natural alluvium deposits can provide a generally low volume source of ground gas. There is low risk potential for ground gas generation due to decay or organic soils within the alluvial deposits onsite. The site is deemed as being of low overall risk of significant contamination, and it is not considered necessary to undertake a ground investigation prior to granting of the DCO application.
Material Assets	The EIA Regulations refer to 'material assets', including cultural heritage, architectural and archaeological aspects and landscape. The term 'material assets' has a broad scope, which may include an asset of human or natural origin, valued for heritage, landscape or socioeconomic reasons. Within the Order Limits there is an area of approximately 260ha in the eastern part of the Site underlain by Sand and Gravel as part of a Mineral Safeguarding Area. The Proposed Development will not impact on the safeguarding or sterilisation of the minerals within the Order Limits as no mineral

Environmental Topic	Reason for Scoping Out
	workings will be pursued in the Order Limits and no impediment to mineral extraction would remain after the Proposed Development has been decommissioned. It is not considered that there are any further 'material assets' to those already addressed within **Chapter 6: Landscape and Visual Impact and Residential Amenity [EN010163/APP/6.2.6]**, **Chapter 9: Cultural Heritage [EN010163/APP/6.2.9]** and **Chapter 10: Socio-Economics [EN010163/APP/6.2.10]**. Therefore, no separate consideration of 'material assets' is considered necessary.
Risk of Major Accidents and Disasters	The nature, scale and location of the Proposed Development is not considered to be vulnerable to or give rise to significant impacts in relation to the Risk of Accidents and Major Disasters[3]. Potential effects relating to soil conditions, surface water flooding and climate change are all considered in other EIA topics. Therefore, a standalone EIA chapter for 'Risk of Major Accidents and Disasters' was confirmed not to be included as specified in **Appendix 1.2 – Steeple Renewables Project EIA Scoping Opinion [EN010163/APP/6.3.1]** provided by PINS. However, PINS did set out that the risk of fire associated with battery storage facilities should be assessed within the ES, and if required, relevant mitigation should be proposed. Risk of battery fire and explosion is addressed at **Chapter 17 - Miscellaneous Issues [EN010163/APP/6.2.17]** and additionally an **Outline Fire Risk Management Plan (Appendix 4.3)**

[3] No definition of 'major accidents and disasters' is provided in the EIA Regulations, however the IEMA Article on 'Assessing Risks of Major Accidents / Disasters in EIA' produced by WSP in 2016 provides the following definition "man-made and natural risks which are considered to be likely, and are anticipated to result in substantial harm that the normal functioning of the project is unable to cope with/rectify i.e. a significant effect."

Environmental Topic	Reason for Scoping Out
	[EN010163/APP/6.3.4] is submitted with the DCO application, outlining mitigation and management measures in place designed to avoid and minimise impacts on the environment in the event of such an occurrence. During all phases of the Proposed Development (construction, operation and decommissioning) the developer would implement measures to be in accordance with the relevant health and safety legislation, regulations, and industry guidance to ensure that risks are suitably controlled and managed (e.g., in relation to working near to overhead power lines or electrical infrastructure). An **Outline Construction and Environmental Management Plan (Appendix 4.1) [EN010163/APP/6.3.4]** is submitted with the DCO application, which would inform the final Construction and Environmental Management Plan at the detailed design stage. Similarly, at **Appendix 4.2** an **Outline Decommissioning Plan [EN010163/APP/6.3.4]** is submitted which will inform the final Decommissioning Plan when the lifetime of the Proposed Development has expired.
Human Health	The potential effects on human health are considered within **Chapter 6: Landscape and Visual Impact and Residential Amenity [EN010163/APP/6.2.6], Chapter 10: Socio-Economics[EN010163/APP/6.2.10], Chapter 11: Noise and Vibration [EN010163/APP/6.2.11],** and **Chapter 14: Air Quality [EN010163/APP/6.2.14** and therefore the scope of effects on Human Health have been shaped by their assessment criteria and scope of works. This approach was confirmed in **Appendix**

Environmental Topic	Reason for Scoping Out
	1.2 – Steeple Renewables Project EIA Scoping Opinion [EN010163/APP/6.3.1]provided by PINS. A separate **Health Impact Assessment [EN010163/APP/7.2]** is submitted with the wider DCO application, outside of the EIA process.

Transboundary Effects

2.2.8 The EIA Regulations require consideration of transboundary effects of development on the environment. Transboundary effects are the effects of a project on the environment of another European Economic Area (EEA) member state.

2.2.9 Paragraph 3 of Schedule 3 to the EIA Regulations requires that:

"the likely significant effects of the development on the environment must be considered… taking into account - … (c) the transboundary nature of the impact".

2.2.10 Further, Schedule 4 of the EIA Regulations state that the ES must include:

"the description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary… effects of the development"

2.2.11 Regulation 32 also obligates the Secretary of State (or PINS on behalf of the Secretary of State) to form a view on the potential for transboundary impacts and, where relevant, consult with relevant EEA states.

2.2.12 The Scoping Opinion provided by PINS outlined given the nature, scale and location of the Proposed Development, PINS does not consider that the Proposed Development has the potential for significant transboundary effects on the environment of any EEA State. As such, transboundary effects have been scoped out of the ES.

2.3 General Assessment Approach

2.3.1 The ES must contain the information specified in Regulation 14(2) of the EIA Regulations and must meet the requirements of Regulation 14(3) and 14(4). 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 to the environmental features likely to be significantly affected.

2.3.2 The ES has been prepared to satisfy the requirements of the EIA Regulations, comprising the following information detailed in Regulation 14(2), 14(3), 14(4) and Schedule 4 of the EIA Regulations below.

2.3.3 Regulation 14(2), 14(3) and 14(4) sets out that:

"(2) An environmental statement is a statement which includes at least—

(a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development;

(b) a description of the likely significant effects of the proposed development on the environment;

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

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

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

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

(3) The environmental statement referred to in paragraph (1) must—

(a) where a scoping opinion has been adopted, be based on the most recent scoping opinion adopted (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion);

(b) include the information reasonably required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment; and

(c) be prepared, taking into account the results of any relevant UK environmental assessment, which is reasonably available to the applicant with a view to avoiding duplication of assessment.

(4) In order to ensure the completeness and quality of the environmental statement—

(a) the applicant must ensure that the environmental statement is prepared by competent experts; and

(b) the environmental statement must be accompanied by a statement from the applicant outlining the relevant expertise or qualifications of such experts".

2.3.4 Schedule 4 sets out that the ES must contain:

"1. A 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, including, where relevant, requisite demolition works, 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 (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;

(d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.

2. 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.

3. A description of the relevant 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.

4. A description of the factors specified in regulation 5(2) 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.

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

(a) the construction and existence of the development, including, where relevant, demolition works;

(b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;

(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste;

(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);

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

(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;

(g) the technologies and the substances used.

The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(1) and Directive 2009/147/EC(2).r

6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example

technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.

7. 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 (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.

8. 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. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.

9. A non-technical summary of the information provided under Paragraphs 1 to 8.

10. A reference list detailing the sources used for the descriptions and assessments included in the Environmental Statement."

Policy and Guidance

2.3.5 In preparing the ES, reference has also been made to the following government or institute guidance:

- Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects)[4];
- Overarching National Policy Statement for Energy (NPS EN-1)[5]
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3)[6];

[4] Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities (2024) Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects
[5] Department for Energy Security and Net Zero (2025) Overarching National Policy Statement for Energy (EN-1)
[6] Department for Energy Security and Net Zero (2025) National Policy Statement for Renewable Energy Infrastructure (EN-3)

- National Policy Statement for Electricity Networks Infrastructure (NPS EN-5)[7];
- Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation (2025)[8];
- Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents (2025)[9];
- Nationally Significant Infrastructure Projects - Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements[10]
- Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope (2025) [11];
- Nationally Significant Infrastructure Projects - Advice on working with public bodies in the infrastructure planning process (2025)[12];
- Nationally Significant Infrastructure Projects : Advice on Cumulative Effects Assessment (2025))[13];
- Nationally Significant Infrastructure Projects : Advice on Transboundary Impacts and Process (2025) Advice on Cumulative Effects (2024)[14];
- Environmental Impact Assessment Guide to: Shaping Quality Development (2015)[15];
- Environmental Impact Assessment Guide to: Delivering Quality Development (2016)[16];
- Health in Environmental Impact Assessment: A Primer for a Proportional Approach (2022)[17];

[7] Department for Energy Security and Net Zero (2025) National Policy Statement for Electricity Networks Infrastructure (EN-5)
[8] PINS (2025) Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation
[9] PINS (2025) Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Documents
[10] PINS (2025)
[11] PINS (2025) Nationally Significant Infrastructure Projects – Advice Note Nine : Rochdale Envelope
[12] PINS (2025) Nationally Significant Infrastructure Projects – Advice on Working with Public Bodies in the Infrastructure Planning Process
[13] PINS (2025) Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Processes
[14] PINS (2025) Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment
[15] IEMA (2015) Environmental Impact Assessment Guide to Shaping Quality Development
[16] IEMA (2016) Environmental Impact Assessment Guide to: Delivering Quality Development
[17] IEMA (2022) Health in Environmental Impact Assessment: A Primer for a Proportional Approach

- Delivering Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (2017)[18];
- IEMA Guide to: Materials and Waste in Environmental Impact Assessment- Guidance for a Proportionate Approach (2020)[19];
- IEMA Guide: A New Perspective on Land and Soil in Environmental Impact Assessment (2022)[20];
- IEMA Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance. 2nd Edition (2022)[21]
- IEMA Guide: Major Accidents and Disasters in EIA: A Primer (2020)[22]; and
- IEMA Guide: Environmental Assessment of Traffic and Movement (2023)[23]

2.3.6 Further consideration of legislative and planning policy context is documented in **Chapter 5: Planning Policy [EN010163/APP/6.2.5]** of this ES, and topic specific policy and guidance have been considered within each of the ES technical chapters, set out within **Chapters 6-17 [EN010163/APP/6.2.6 -EN010163/APP/6.2.17]** of the ES.

2.4 Development Parameters and the Rochdale Envelope

2.4.1 The design of the Proposed Development has been an iterative process, based on environmental assessments and consultation with statutory and non-statutory consultees. In order to maintain flexibility in the design and layout at this stage in the process, the assessment of the Proposed Development in this Environmental Statement will adopt the Rochdale Envelope approach, as described in the NSIP - Advice Note Nine: Rochdale Envelope (2025) . Some flexibility in the design is important in order to meet the changing demands of the UK solar energy market and respond to changes in technology that may emerge prior to construction.

2.4.2 The Proposed Development subject to this EIA is described in more detail within **Chapter 3: Site Description, Site Selection and Iterative Design Process**

[18] IEMA (2017) Guide to: Materials and Waste in Environmental Impact Assessment- Guidance for a Proportionate Approach
[19] IEMA (2020) Guide to: Materials and Waste in Environmental Impact Assessment – Guidance for a Proportionate Approach
[20] IEMA (2022) Guide: A New Perspective on Land and Soil and Environmental Impact Assessment
[21] IEMA (2022) Guide: Assessing Greenhouse Gas Emissions and Evaluating Their Significance
[22] IEMA (2020) Guide: Major Accidents and Disasters in EIA: A Primer
[23] IEMA (2023) Guide: Environmental Assessment of Traffic and Movement (2023)

[EN010163/APP/6.2.3] and **Chapter 4: Proposed Development [EN010163/APP/6.3.4]**. Together, these contain the parameters and controls defining those aspects of the Proposed Development capable of having significant environmental effects, as defined in the EIA Regulations.

2.4.3 Where flexibility is required, NSIP - Advice Note Nine: Rochdale Envelope (2025)9 has been applied to the EIA with regard to the use of the 'Rochdale Envelope' to ensure a robust approach of the assessment of the likely significant effects arising from the Proposed Development. This involves assessing the maximum (and where relevant, minimum) parameters, size (footprint, width, and height) technology, and locations of the different elements of the Proposed Development for the elements where flexibility needs to be retained, recognising that the worst-case parameter for one technical assessment may differ from another.

2.4.4 Any assumptions made regarding the maximum design scenarios have been identified in each of the technical chapters and have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group.

2.4.5 To assist with the interpretation of the Rochdale Envelope, an **Indicative Site Layout (Figure 2.1) [EN010163/APP/6.4.2]** has been created to provide a visual representation against the set parameters that define the maximum spatial extent of each aspect of the Proposed Development, and the EIA has assessed against **Figure 2.1 Indicative Site Layout [EN010163/APP/6.4.2]**. The maximum parameters that have been used for the purpose of the ES assessment are set out in **Chapter 4: The Proposed Development [EN010163/APP/6.2.4]**.

2.4.6 Since the PEIR, environmental assessments have progressed and **Figure 2.1 Indicative Site Layout [EN010163/APP/6.4.2]** has been further amended to incorporate for additional mitigation within the design of the Proposed Development. Details of the design progression of the Indicative Site Layout are set out in **Chapter 3: Site Description, Site Selection and Iterative Design Process of this ES [EN010163/APP/6.2.3]**.

2.4.7 **Chapters 6 to 17** of this ES **[EN010163/APP/6.2.6 -EN010163/APP/6.2.17]** describe the parameters applied in relation to the particular discipline. As the design of the Proposed Development has evolved, key elements of the design have been fixed. However, flexibility has been maintained for some aspects of the Proposed Development in the DCO application. Where flexibility has been retained in the DCO

application, any changes in design parameters will remain within the likely worst-case. Justification for the need to retain flexibility in certain parameters is outlined in **Chapter 3: Site Description, Site Selection and Iterative Design Process [EN010163/APP/6.2.3]**.

2.4.8 **Appendix 4.5 – Outline Design Principles [EN010163/APP/6.3.4]** contains a summarised version of the guiding principles for the design parameters of the Proposed Development, secured within the **draft DCO [EN010163/APP/3.1]**. The **Works Plans [EN010163/APP/2.2]** details the infrastructure comprising the Proposed Development and illustratively sets out the spatial parameters of the 'works numbers' detailed in Schedule 1 of the **draft DCO [EN010163/APP/3.1]**.

2.5 Environmental Impact Assessment Methodology

2.5.1 The content of the ES is based on the following:

- Review of the baseline situation through existing information, including data, reports, site surveys and desktop studies;
- Consideration of the relevant local, regional and national planning policies, guidelines and legislation relevant to the EIA such as the National Policy Statements (NPS-EN1, NPS-EN3 and NPS-EN5), National Planning Policy Framework (NPPF) and accompanying National Planning Practice Guidance (NPPG), and the statutory extant and emerging development plan policies;
- Consideration of potential sensitive receptors;
- Identification of likely significant environmental effects and an evaluation of their duration and magnitude;
- Expert opinion;
- Modelling and calculations;
- Use of relevant technical and good practice guidance; and
- Specific consultations with appropriate bodies.

2.5.2 Each technical chapter provides details of the methodology for baseline data collection and the approach to the preliminary assessment of effects. Each environmental topic has been considered by a specialist in that area.

2.5.3 Each technical chapter defines the scope of the assessment within the methodology section, together with details of the study area, desk study and survey work undertaken.

2.5.4 Environmental effects have been evaluated with reference to definitive standards and legislation, where available. Where it has not been possible to quantify effects, assessment have been based on available knowledge and professional judgement.

2.6 Structure of the Technical Chapters

2.6.1 Throughout the EIA process, the likely significant environmental effects of the Proposed Development have been assessed. Each technical chapter of the ES has generally been set out in the way shown in Table 2.3 below.

Table 2.3 Structure of the Technical Chapter

Section	Description
Introduction	Introduces the topic under consideration, states the purpose of undertaking the assessment.
Assessment Methodology	Describes the method and scope of the assessment undertaken and responses to consultation in relation to method and scope in each case pertinent to the topic under consideration.
Baseline Conditions	Describes the baseline conditions pertinent to the topic under consideration including baseline survey information.
Assessment of Likely Significant Effects	Identifies the likely effects, evaluates those effects and assesses their significance, considering the construction, operational and decommissioning phases and direct and indirect effects.
Mitigation and Enhancement	Describes the mitigation strategies for the significant effects identified and sets out any residual effects from the Proposed Development, after the implementation of mitigation.

Section	Description
Cumulative and In-combination Effects	Considers potential cumulative and in-combination[24] effects with those of other developments in the area.
Summary	A summary of the chapter, including baseline conditions, likely significant effects, mitigation and conclusion.
Summary of Effects, Mitigation and Residual Effects Table	A table summarising the significance of effects with the Proposed Development inn place, mitigation and/or enhancement measures if applicable, and residual effects of the Proposed Development with mitigation and/or enhancement in place.

2.7 Determining the Baseline Conditions

2.7.1 The existing and likely future environmental conditions in the absence of the Proposed Development are known as 'baseline conditions'. Each technical chapter includes a description of the current (baseline) environmental conditions. The baseline conditions at the Site and within the study area form the basis of the assessment, against which the likely significant effects are assessed.

2.7.2 Consideration has been given as to how the baseline conditions would evolve in the absence of the Proposed Development, known as the 'future baseline'.

2.7.3 The consideration of future baseline conditions has also taken into account the likely effects of climate change, as far as these are known at the time of writing. This has been based on information available from the UK Climate Projections project, developed by the Met Office and Environment Agency[25], which provides information on plausible changes in climate for the UK.

2.7.4 The baseline information has been gathered from various sources, including:

- Online / digital resources;

[24] An 'in-combination' effect can occur when a single receptor (e.g., a residential property) is affected by more than one impact arising from the Proposed Development (e.g., noise and air quality impacts arising from the excavation of soils).
[25] Met Office (2018) UK Climate Projections (UKCP) [online] available at: https://www.metoffice.gov.uk/research/approach/collaboration/ukcp [last accessed 4th November 2024].

- Data searches e.g. Historic Environment Record;
- Stakeholder engagement; and
- Baseline site surveys.

2.7.5 Technical chapter authors have also considered other factors relevant to identification of future baseline conditions, such as trends in population size of protected species or changes in socio-economic conditions over time.

2.7.6 The full results from all baseline data collection and surveys are described within ES **Chapters 6-17 [EN010163/APP/6.2.6 -EN010163/APP/6.2.17]** as well as any limitations and assumptions with the data.

2.8 Temporal Scope

2.8.1 Spatially, the area over which effects could occur may be wider than the Order Limits. The appropriate study area has been determined for each environmental topic and set out in **Chapters 6-17 [EN010163/APP/6.2.6 -EN010163/APP/6.2.17]**. Specific study areas are defined in each topic chapter and allow for assessment of indirect as well as direct effects, together with off-site factors, such as traffic routes, where relevant. These take account of the geographic scope of the potential impacts relevant to that topic and/or of the information required to assess the impacts. The study area for each environmental topic incorporates the Order Limits as a minimum for the Proposed Development. They are also used to inform the assessment of cumulative effects within each technical chapter, **Chapters 6-17 [EN010163/APP/6.2.6 -EN010163/APP/6.2.17]**.

2.8.2 Specific temporal periods are defined for the assessment of baseline conditions and the impacts of the Proposed Development. In doing so, consideration has been given to the worst-case durations of construction, operational and decommissioning activities. Where relevant, consideration has been given to the duration it could take for environmental design measures to become established and effective. Timeframes for which mitigation measures are likely to have achieved their desired outcome has been defined within this ES.

Construction Phase

2.8.3 For the purposes of the assessment, the construction phase effects are those effects that may result from preparation works, construction, and commissioning activities. This covers effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, risk of fuel / oil

spillage, and the visual intrusion of plant and machinery on site. Some aspects of construction-related effects will last for longer than others. For example, impacts related to earth moving are likely to be relatively short in duration compared with the construction of energy infrastructure and landscaping activities, which are likely to continue throughout the entire construction period.

Operational Phase

2.8.4 Operational effects are the effects that are associated with operational and maintenance activities during the generating lifetime of the Proposed Development. This includes the effects of the physical presence of the Proposed Development, and its operation, use and maintenance. Timescales associated with these enduring effects generally are as follows:

- Short term – a period of months to a few years (usually associated with the construction and decommissioning phases);
- Medium term – period associated with the operational phase; and
- Long term – a period of many years, with the potential for permanent impacts beyond the operational phase .

2.8.5 If there is any variation with the above time periods, then this is set out within the respective ES chapter.

Decommissioning Phase

2.8.6 Decommissioning effects are changes resulting from activities beginning and ending during the decommissioning stage. This covers effects related to decommissioning the Proposed Development such as decommissioning site traffic, noise and vibration from decommissioning activities, dust generation, site runoff, mud on roads, risk of fuel / oil spillage, and the visual intrusion of plant and machinery on site. Typically, decommissioning phase effects are similar in nature to the construction phase, although may be of shorter duration and of lower intensity.

2.8.7 Decommissioning phase effects are set out and assessed separately to construction and operation phase effects in each of the technical chapters. In some cases, given the inherent uncertainty on the scope of decommissioning activities and the relevant environmental conditions prevalent at the time, the technical chapter will provide a concise assessment explaining that the effects during decommissioning are expected to be less than or the same as those predicted during construction which is considered to be a conservative and suitably precautionary assumption.

2.9 Assessment Years

2.9.1 The approach to assessment has incorporated the use of identified assessment years to allow for preliminary evaluation of the likely effects during the phased construction and operation of the Proposed Development. The following assessment years have been used to inform this ES:

- Existing Baseline (2024 / 2025) – this is the principal baseline against which environmental effects will be assessed in which the baseline studies for the EIA are being undertaken. Some survey work has taken place in 2024, hence the spread in years for the existing baseline;
- Future baseline (Without the Proposed Development) in 2027-2029 (construction phase), 2029-2069 (operational phase) and 2069 (decommissioning phase) is set out for each topic, where needed, within the respective chapter. These assessment years are explained below ;
- Construction (2027 - 2029) (With the Proposed Development): - The length of the construction programme for the purposes of the EIA is anticipated to be 2027-2029. This assumes that the Proposed Development is built over a 24-month period. This is a likely 'worst-case' scenario from a traffic generation point of view as it compresses the trip numbers into a shorter duration and represents the greatest impact on the highway network.
- Operation (2029 – 2069) (With the Proposed Development): - This assumes that the Proposed Development will be operational during the latter part of 2029 and is determined by the timeframe National Grid has stated within their Grid Offer for completion of the connection at the existing West Burton Power Substation. Decommissioning (2069) –It is proposed that the Proposed Development will be decommissioned after 40 years of operation. Decommissioning will take approximately 12 months potentially in a phased approach.

2.10 Determining Significance of Effects

2.10.1 The purpose of the EIA is to identify the likely 'significance' of environmental effects (beneficial or adverse) arising from a Proposed Development. In broad terms, environmental effects are described as:

- Adverse - detrimental or negative effects to an environmental resource or receptor;

- Beneficial - advantageous or positive effect to an environmental resource or receptor; or
- Neutral - a neutral effect to an environmental resource or receptor.

2.10.2 The level of effect reflects the relationship between two factors:

- The magnitude or severity of an effect (i.e. the actual change taking place to the environment); and
- The sensitivity, importance or value of the resource or receptor.

2.10.3 The broad criteria for determining magnitude are set out in Table 2.4.

Table 2.4: Degrees of Magnitude and their Criteria

Magnitude of Effect	Criteria
High	Total loss or major / substantial alteration to 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 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 the underlying character / composition / attributes of the baseline condition will be similar to the pre-development.
Negligible	Very little change from baseline conditions. Change not material, barely distinguishable or indistinguishable, approximating to a 'no change' situation
None	No change from the baseline conditions.

2.10.4 The sensitivity of a receptor is based on the relative importance of the receptor using the scale in Table 2.5.

Table 2.5 Degrees of Sensitivity and their Criteria

Sensitivity	Criteria
High	The receptor / resource has little ability to absorb change without fundamentally altering its present character or is of international or national importance.
Medium	The receptor / resource has moderate capacity to absorb change without significantly altering its present character, or is of local importance, but not national or international importance.
Low	The receptor / resource is tolerant of change without detrimental effect, is of low or local importance.
Negligible	The receptor / resource can accommodate change without material effect, is of limited importance.

2.10.5 Additionally, the reversibility of the effect, being either reversible or irreversible and the likelihood of the effect occurring, based on a scale of certain, likely or unlikely is considered to enable identifying the likely 'significance' of environmental effects.

2.10.6 Receptor sensitivity and magnitude of change away from the baseline conditions is used to determine the resultant effect, and assigned in accordance with Table 2.6, whereby effects assigned a rating of 'Major' or 'Moderate' would be considered as 'significant'.

Table 2. 6: Degrees of Significance

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

2.10.7 The above magnitude and significance criteria are provided as a guide for specialists to categorise the significance of effects within the ES. Where discipline-specific methodology has been applied that differs from the generic criteria above, this is clearly explained within the given chapter under the heading of 'Assessment Methodology'.

2.10.8 As can be seen from Table 2.6, when an environmental effect is assessed as having a 'Major' or 'Moderate' degree of significance it is deemed to be 'significant'. These are the cells shaded in orange in Table 2.6. When such a significant effect occurs, consideration of mitigation solutions or enhancements to minimise the effect) will be considered. Once these mitigations and enhancements have been assessed the degree of significance may decrease.

2.10.9 The approach to assessing and assigning significance to an environmental effect is derived from a variety of sources including:

- topic specific guidelines, standards and codes of practice;
- the EIA Regulations;
- advice from statutory consultees and other stakeholders; and
- the expert judgement of the team undertaking the EIA.

2.11 Addressing Uncertainty in Assessment

2.11.1 There is some degree of inherent uncertainty within the EIA process, in relation to factors such as future improvements to construction and design, the potential effects of climate change on existing receptors and in terms of the margin of error within forecasting and modelling tools. In all cases, where uncertainty exists, or where difficulties have been encountered, this has been identified within the relevant chapter of the ES, together with details of the measures that have been taken to reduce uncertainty as far as reasonably practicable. As the EIA process progresses, the degree of uncertainty is anticipated to reduce.

2.11.2 The assessment of construction and decommissioning effects will be undertaken based on existing knowledge, techniques and equipment. A 'reasonable worst-case' scenario will be used with respect to the envisaged construction methods, location (proximity to sensitive receptors), phasing and timing of construction activities.

2.11.3 Where modelling tools have been used within the topic assessments, care has been taken to ensure that the tool selected is appropriate for the assessment, considering topic-specific good practice and guidance. Calibration has been used to ensure a reasonable degree of accuracy in measurements. Technical chapters within the ES set out measures taken to address any uncertainty with regard to modelling inputs and outputs and any assumptions made.

2.12 Mitigation

2.12.1 The EIA Regulations (Regulation 14(2)(c)) require that where likely significant effects are identified, *"a description of any feature of the Project, or measures envisaged in order to avoid, prevent or reduce or, if possible, offset any likely significant adverse effects on the environment"* should be provided.

2.12.2 The development of mitigation measures is part of the iterative EIA process. Therefore, measures are under consideration throughout the EIA process in response to the findings of initial assessments. The Proposed Development has had several embedded mitigation measures incorporated into the concept design to avoid or minimise environmental impacts. In some cases, these measures result in enhancement of environmental conditions.

2.12.3 Where the assessment of the Proposed Development has identified potential for significant adverse environmental effects, the scope for mitigation of those effects has been considered and is outlined in the appropriate technical chapter. These measures are secured by DCO requirements.

2.12.4 Where the effectiveness of the mitigation proposed has been considered uncertain, or where it depends upon assumptions of operating procedures, then data and/or professional judgement has been introduced to support these assumptions.

2.12.5 The technical chapters included within this ES consider the following mitigation types:

- Measures included as part of the Proposed Development design (sometimes referred to as mitigation by design or embedded mitigation). This type of mitigation describes efforts undertaken to prevent or reduce potential significant adverse effects by iteratively altering design throughout the evolution of the Proposed Development. This is mitigation that would inherently be delivered and is therefore considered to form part of the Proposed Development and has been considered in the assessment of effects of the EIA;

- Measures proposed to avoid effects occurring or to minimise environmental effects, and are not included within the design (referred to as additional mitigation); and
- Measures proposed that bring additional benefits to the Proposed Development but are not necessary to make the development acceptable (referred to as enhancements).

2.12.6 Standard measures and the adoption of construction best practice methods to avoid, minimise or manage adverse environmental effects, or to ensure realisation of beneficial effects, are assumed to have been incorporated into the design of the Proposed Development and the methods of its construction from the outset.

2.12.7 As the EIA has progressed, further work in relation to mitigation measures has been undertaken and informed the design of the Proposed Development for which development consent is sought. This is reflected in this ES. The **draft DCO [EN010163/APP/3.1]** has been developed to be consistent with the measures identified in this ES and any draft management plans (listed at paragraph 2.14.2 of this ES chapter) , in order to ensure consistent implementation of the measures identified through the EIA.

2.13 Residual Effects

2.13.1 Once additional mitigation measures are identified, effects are re-assessed taking account of the proposed mitigation applied and to provide the residual effects i.e., the overall likely effects of the Proposed Development. This approach allows for all deliverable and committed mitigation to be considered in determining the significance of effects reported in this ES.

2.14 Monitoring

2.14.1 Where the EIA reported in this ES concludes that there are likely adverse environmental effects, proportionate monitoring of the associated mitigation measures may be required in accordance with the EIA Regulations to ensure they are successful in achieving their mitigation objective.

2.14.2 Monitoring measures would be undertaken as required during construction, operation and decommissioning. These measures will be secured in the DCO application through the management plans for each phase of the Proposed Development, including:

- **Appendix 4.1 - Outline Construction and Environmental Management Plan [EN010163/APP/6.3.4]**
- **Appendix 4.2- Outline Decommissioning Plan [EN010163/APP/6.3.4]**
- **Appendix 4.3 - Outline Fire Risk Management Plan [EN010163/APP/6.3.4]**
- **Appendix 4.4 - Outline Operational Management Plan [EN010163/APP/6.3.4]**
- **Appendix 9.4 – Outline Written Scheme of Investigation for Pre-Determination Trial Trenching [EN010163/APP/6.3.9]**
- **Appendix 9.5 – Outline Written Scheme of Investigation for Post-Consent Archaeological Works [EN010163/APP/6.3.9]**
- **Appendix 10.1 - Outline Supply Chain, Employment and Skills Plan [EN010163/APP/6.3.10]**
- **Appendix 13.2 - Outline Construction Traffic Management Plan [EN010163/APP/6.3.13]**
- **Appendix 15.2 - Outline Soil Management Plan [EN010163/APP/6.3.15**]

2.14.3 Monitoring measures are reported, where applicable, in **Chapters 6-17 [EN010163/APP/6.2.6 -EN010163/APP/6.2.17]** and are secured (where necessary) through DCO requirements.

2.15 Cumulative and In-Combination Effects

2.15.1 Cumulative effects consider the impacts of other 'reasonably foreseeable' developments within the vicinity and context of the Proposed Development.

2.15.2 Cumulative effects are assessed under two types of relationships:

- Cumulative effects: several developments with insignificant impacts individually but which together represent a significant cumulative effect; and
- In-combination effects: combined effect of individual development - for example, the effects of noise, dust and visual on the same receptor, which together generate a greater impact than the effects in isolation.

Legislative and Policy Context

2.15.3 With respect to cumulative effects, Schedule 4 5 (e) of the EIA Regulations state that consideration should be given to:

"…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…".

Cumulative Effects Assessment Approach

2.15.4 There is currently no standard methodology for a Cumulative Effects Assessment (CEA), however, there is a range of public sector and industry led guidance available

2.15.5 The assessment within this ES is consistent with the Planning Inspectorate's NSIP Advice Note: Cumulative Effects Assessment which provides advice regarding a staged approach for documenting the CEA within an ES, relevant to Nationally Significant Infrastructure Projects). The Advice Note highlights the need to consider the potential for cumulative effects arising due to the interactions between different components of the development, as well as with other existing development and/or approved development.

2.15.6 Therefore, this ES considers potential environmental effects of the Proposed Development cumulatively with the environmental effects of other existing and/or approved schemes on sensitive receptors identified through the assessment process.

2.15.7 The approach consists of a four-stage process which is further described below in Table 2.7.The scope of cumulative assessment includes identification of a long list of 'other development' within the appropriate Zone of Influence (ZoI) for each discipline, which forms the basis of the search area for the cumulative effects assessment.

2.15.8 Table 2.7 sets out the four-stage process to assess cumulative effects:

Table 2.7 Summary of the Four Stage Process for Cumulative Effects Assessment

Cumulative Effect Assessment Stage	Description of Stage
Stage 1	Establish the National Significant Infrastructure Project's Zone of Influence (ZoI) and identify long list of 'other existing and/or approved developments'.
Stage 2	Establish the shortlist of 'other existing and/or approved developments' for Cumulative Effects Assessment.

Cumulative Effect Assessment Stage	Description of Stage
Stage 3	Information gathering of the 'other existing and/or developments'.
Stage 4	An assessment of the likely cumulative effects. Mitigation measures are identified (where appropriate) where an adverse cumulative effect is identified. The apportionment of effect between the Proposed Development and the 'other developments' is considered, e.g., whether the contribution to the effect is demonstrably related to one development or whether there is an equal contribution from either development.

Stage 1 - Establishing the Zone of Influence and long list of 'other developments'

Establishing the Long List

2.15.9 A review of other developments has been undertaken, initially encompassing a ZoI defined by the environmental topic specialists to prepare a long list of 'other existing and/or approved developments'.

2.15.10 The long list of other existing and/or approved development will be established using the tiered approach in accordance with NSIP: Advice on Cumulative Effects Assessment (2025) note Table 2 Assigning certainty to 'other existing and/or approved development'.

2.15.11 Developments included in the initial long list will be based on the following criteria:

1. Large-scale development currently under construction;
2. Approved applications which have not yet been implemented;
3. Large-scale submitted applications not yet determined;
4. Refused large-scale applications, subject to appeal procedures not yet determined;
5. On the National Infrastructure Planning Programme of Projects;

6. Development identified in the relevant Development Plan (and emerging Development Plans); and
7. Development identified in other plans and programmes which set the framework for future development consents/approvals where such development is reasonably likely to come forward.

2.15.12 Criteria are developed and applied to filter developments which may be excluded from the initial long list, having regard to the size and spatial influence of each development. Reasons are identified for inclusion or exclusion from cumulative assessment.

2.15.13 Additionally, the NSIP: Advice on Cumulative Effects Assessment (2025) note recommends that a wide range of future projects is included within the CEA which can be tiered (from Tier 1-3) according to how far advanced the development is within the planning system and to the level of detail that is likely to be available for each tier. These different tiers are set out below, adapted to the context of the Proposed Development:

- Tier 1
    - Projects under construction;
    - Permitted application(s) whether under the Planning Act 2008 or other regimes but not yet implemented; and
    - Submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined.
- Tier 2
    - Project on the PINS programme of Projects where an EIA Scoping Report has been submitted
- Tier 3
    - Projects on the PINS Programme of Projects where an EIA 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; and

- 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.

2.15.14 Decreasing level of detail is likely to be available for Tier 2 and Tier 3 developments, as such, the CEA is less likely to be able to make a robust assessment in relation to these projects. Where relevant information for these is available, further investigation is undertaken. However, where detail is not available to carry out a robust assessment, these developments have not been assessed any further and justification given for this in **Appendix 2.3 - Cumulative Sites Long List and Short List [EN010163/APP/6.3.2]**.

2.15.15 The long list of 'other development' was collated prior to finalisation of the ES, as required, and was up-to-date and frozen on the 1st March 2025.

2.15.16 Where 'other developments' are completed before the construction of the Proposed Development, any effects from them should be considered as part of the baseline and are considered as part of the EIA.

Zone of Influence

2.15.17 The ZoI for each environmental topic area will be identified based on the extent of likely effects as identified as the study area in each of the individual topic chapters (**Chapters 6 – 17 [EN010163/APP/6.2.6 -EN010163/APP/6.2.17]**) of this ES. The ZoI has been identified in line with industry specific guidance along with professional judgement and knowledge of the local area relevant to each environmental topic area. The identified ZoIs are presented in Table 2.8 below for the scoped in disciplines.

Table 2.8: ZoI Identified for the Cumulative Effects Assessment

Environmental Topic	ZoI
Landscape and Visual and Residential Visual Amenity	10km from the Order Limits
Ecology and Biodiversity	5km from the Order Limits

Environmental Topic	ZoI
Hydrology, Hydrogeology, Flood Risk and Drainage	Hydrological and hydrogeological receptors within a 1km radius from the Order Limits.
Cultural Heritage	10km from the Order Limits.
Socio-Economics	Bassetlaw District and Nottinghamshire County.
Noise and Vibration	2km from the Order Limits
Climate Change	Climate change influence determined by identified receptors and their subsequent study areas in individual scoped in topic chapters.
Transport and Access	Extent of the local road network affected by the construction and decommissioning phases. A restricted routing is proposed. This includes the following: • The A1(M) Junction 34; • A614; • A638; • A631; • A620; • Gainsborough Road; and • Station Road.
Air Quality	6km from the Order Limits.
Land Use and Agriculture	Order limits and adjoining agriculture land where relevant. Due regard has been given to the implication of land use and agriculture in a Nottinghamshire/ Lincolnshire -wide context for completeness
Glint and Glare	Ground based receptors (e.g., local roads, regional roads and residential dwellings): 1km from the Order Limits.

Environmental Topic	ZoI
	Railway receptors (e.g., train operators, and railway signals): 500m from the Order Limits. Aviation receptors: 15km from the Order Limits.

2.15.18 **Appendix 2.3 -Cumulative Sites Long List and Short List [EN010163/APP/6.3.2]** presents the identified long list of existing and/or approved developments within the search area.

Stage 2 - Establishing the short list of 'other developments'

2.15.19 There is no formal guidance on the size of a 'Study Area' when considering the cumulative impact of a development. Factors such as topography of a landscape can affect the extent of a visual envelope for cumulative or sequential views; flight lines for birds moving from a roosting to a feeding ground could affect the cumulative impact on ecology. As a result, consideration will be given to the known environmental constraints on and around the Proposed Development to determine what factors could affect extent of cumulative sites.

2.15.20 To ensure that the cumulative assessment is proportionate, threshold criteria will be applied to the long list to establish a shortlist. The criteria will ensure that only other existing and/or approved development, which is likely to result in significant cumulative effects, is taken forward to the assessment stage. The threshold criteria that will be used will consider the following factors:

- Temporal scope
    - consideration of relative construction, operation and decommissioning programmes of the 'other development' identified in the ZoI with the scheme programme, to establish whether there is overlap, or similar temporal scope for construction and operation phases, and any potential for interaction.
- Scale and nature of the development
    - consideration of whether the scale and nature of the developments identified in the ZoI are likely to interact with the scheme and to result in a cumulative effect;

- characteristics of other developments in relation to use of natural resources, pollution and nuisances, and risks to human health;
- the scale of developments which are more than 1 hectare of urban development which is not a dwelling development;
- the development includes more than 150 dwellings; and
- the overall area of the development exceeds 5 hectares.

- Other factors
  - nature and/or capacity of the receiving environment that would make a significant cumulative effect with 'other development'. The sensitivity of the receiving environment includes whether the sites are within:
    - wetlands, riparian areas, river mouths;
    - coastal zones and the marine environment;
    - mountain and forest areas;
    - nature reserves and parks;
    - European sites and other areas classified or protected under national legislation;
    - areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure;
    - densely populated areas; and
    - landscapes and sites of historical, cultural or archaeological significance.
  - the relative abundance, availability, quality and regenerative capacity of natural resources in the area;
  - potential for creation of source-pathway-receptor impacts; and
  - the likely significance of effects where environmental assessment have been undertaken for the 'other developments' as having moderate to large significance.

- Professional judgement.

2.15.21 The Scoping Response from PINS (see **Appendix 1.2 – EIA Scoping Response [EN010163/APP/6.3.1]**) stated that the study area for the cumulative sites with reference to relevant guidance and that the ES should provide a clear justification for the extent of each ZoI and how it captures the effects from the Proposed Development.

2.15.22 The Applicant notes the UK Government has confirmed the West Burton A Power Station site will be home to the ground-breaking Spherical Tokamak for Energy Production (STEP) prototype fusion energy plant. Although the location of this development has been selected, this project is in its infancy with no registered intention for development such that the Tier 3 requirements are not satisfied. Therefore, due to the infancy stage of development for the STEP proposal, this ES has not considered this development further as detail is not available to carry out a robust assessment. The Applicant understands the Proposed Development will not cause risk to the STEP project in regard to connection capacity at National Grid West Burton Substation as each project is subject to separate gird connections.

2.15.23 Following on from the Scoping Response and Section 42 Responses, the shortlist for 'other developments' has been reviewed by the technical topic experts in relation to the relevant ZoI to identify 'other existing development and/or approved developments' which have the potential to result in cumulative effects with the Proposed Development and the list of sites to be considered within the ES has been expanded. The cumulative assessment within the ES will consider the schemes set out within in Table 2.9 below.

Table 2.9 Details of Shortlisted Cumulative Schemes

No.	Name of Applicant and Brief Description of Scheme	NSIP?	Reference Number	Approx. Distance from the Site
Tier 1 Sites				
1	Cottam Solar Project Limited Status - consented	Yes	EN010133	3km to the south

No.	Name of Applicant and Brief Description of Scheme	NSIP?	Reference Number	Approx. Distance from the Site
	(Solar energy generation and battery storage in excess of 50MW.)			
2	Gate Burton Energy Park Ltd Status - consented (Solar energy generating scheme in excess of 50MW)	Yes	EN010131	300m to the east
3	Tillbridge Solar Limited Status - submitted (Solar energy generating scheme and battery storage in excess of 50MW)	Yes	EN010142	3km to the south
4	West Burton C Power Station -EDF Energy (Thermal Generation) Limited Status- consented (Power station (peaking plant) capable of generating up to 299MW of electrical generation capacity)	Yes	EN010088	Adjacent to the north-east of the Site
5	West Burton Solar Project Limited Status - consented (Solar energy generating scheme and battery storage in excess of 50MW)	Yes	EN010132	The cable corridor for this scheme traverses the Site.
6	Heckington Fen Energy Park - Ecotricity (Heck Fen Solar) Limited Status - consented	Yes	EN010123	55km to the south-east

No.	Name of Applicant and Brief Description of Scheme	NSIP?	Reference Number	Approx. Distance from the Site
	(Solar energy generating scheme and energy storage in excess of 50MW)			
7	Bumblebee Solar Farm -Enso Green Holdings A Limited Status - consented (Solar energy generating scheme and energy storage under 50MW) 24/01358/FUL proposes to extend the cable route by continuing off Gainsborough Road into the West Burton Power station site to connect to the existing substation.	No	Bassetlaw District Council (BDC) ref: 22/00358/FUL Associated BDC planning application reference: 24/01358/FUL	2.5km to the north
8	Wood Lane Solar Farm -Elgin Energy ESCO LTD Status - consented (Solar energy generating scheme under 50MW)	No	BDC ref: 20/00117/FUL	Adjacent to the west
9	West Burton C Battery Storage -West Burton C Ltd Status - consented (Battery storage scheme up to 500MW)	No	BDC ref: 22/01713/FUL	Adjacent to the north
10	Site clearance (demolition) of West Burton A Power Station – EDF Status - consented	No	BDC ref: 23/00485/DEM	Adjacent to the north

No.	Name of Applicant and Brief Description of Scheme	NSIP?	Reference Number	Approx. Distance from the Site
11	Sturton le Steeple Quarry - Lafarge Aggregates Limited (now being implemented by Aggregate Industries) Status – consented/Access track under construction (Sand and gravel extraction)	No	Nottinghamshire County Council (NCC) extant ref: V/4386	Adjacent to the south-east
12	Bole Ings Ash Disposal Site - EDF Status – operational/under construction (Full ash recovery at the West Burton Power Station site, and use of ash processing equipment)	No	NCC ref: F/3581, and V/4079 (variation of conditions 11, 13, and 53 of planning permission 1/18/00234/CDM)	2km to the north of the Site
13	Commercial Development at land at Skellingthorpe Road - Stirlin Developments Status - consented (Outline planning application for the material change of use of land, erection of buildings and associated development for employment uses falling within any of use classes B1 Business, B2 General Industrial and B8 Storage and Distribution and associated infrastructure)	No	West Lindsey District Council (WLDC) ref: 140696	11.2km to the south-east
Tier 2 Sites				

No.	Name of Applicant and Brief Description of Scheme	NSIP?	Reference Number	Approx. Distance from the Site
14	New 400 kilovolt (kV) electricity transmission connection - North Humber to High Marnham -National Grid Electricity Transmission Status - proposed (Reinforcement of the National Grid transmission network (i.e., a new ~90km transmission line))	Yes	EN020034	Overhead lines are currently proposed to traverse the western portion of the Site.
15	Great North Road Solar and Biodiversity Park -Elements Green Trent Limited Status - proposed (Solar energy generating scheme and battery storage in excess of 50MW)	Yes	EN010162	13km to the south
16	One Earth Solar Farm Status - proposed (Solar energy generating scheme and battery storage in excess of 50MW)	Yes	EN010159	8km to the south
17	Land at Apleyhead Junction A1, Worksop - Caddick Developments Status - submitted	No	BDC Policy ST6 Apleyhead Junction BDC ref: 24/01186/FUL	12km to the south-west

No.	Name of Applicant and Brief Description of Scheme	NSIP?	Reference Number	Approx. Distance from the Site
	(Use Class B8 Development (Logistics and Distribution))			

2.15.24 The cumulative schemes set out in Table 2.9 are shown on **Figure 2.3 – Cumulative Schemes Plan [EN010163/APP/6.4.2]**.

2.15.25 The cumulative shortlist of 'other developments' was made available to all technical teams undertaking the EIA for consideration in the individual assessment of cumulative effects, presented in the technical chapters. Within each technical chapter detail is provided as to which developments have been assessed.

2.15.26 Where schemes have been discounted from the shortlist, they will continue to be monitored to ensure that any changes to those schemes are identified and their omission from the shortlist is reassessed.

Stage 3 - Information gathering of the 'other existing and/or developments'

2.15.27 A desk study search of the environmental information available for each of the 'other developments' has been undertaken. This included searching on the Local Planning Authorities and PINS websites and ongoing engagement with the local planning authorities. The information gathered has been used to identify the likely significant cumulative effects for assessment at Stage 4.

Stage 4 – Assessment of Likely Significant Effects

2.15.28 The assessment of likely significant cumulative effects is undertaken to an appropriate level of detail commensurate with the information available for the 'other developments' within each technical chapter of the ES. Measures will be set out envisaged to reduce or avoid any identified significant adverse cumulative effects and, where appropriate, any proposed monitoring arrangements. The assessment within each topic chapter includes a list of those developments considered to have the potential to generate a cumulative effect together with the Proposed Development. The general criteria used to determine significance of

effects is set out in Table 2.10 below. Effects which are 'Moderate', or 'Major' are deemed to be significant in EIA terms, unless otherwise stated in individual technical chapter methodologies.

Table 2.10- Significance of Effect Criteria Table for Cumulative Effects

Significance of Effect	Typical descriptors of effects
Major (Adverse or Beneficial)	• Where the cumulative effects of the Proposed Development in association with other development upon an individual or collection of environmental receptors would be notably significant (positive or negative). This could be by virtue of their effect at a regional or district scale and/or potential concerns to the project, depending upon the relative importance attached to the issue during the decision-making process. They are generally, but not exclusively associated with sites and features of national importance and resources/features which are unique and which, if lost, cannot be replaced or relocated. • Effects would be permanent for receptors of very high value. • Effects at this level are material in the decision-making process.
Moderate (Adverse or Beneficial)	• Where the cumulative effects of the Proposed Development in association with other development upon an individual or collection of environmental receptors could be significant (positive or negative). These effects are likely to be important locally. • Effects at this level can be considered to be material decision-making factors.

Minor (Adverse or Beneficial)	• Where the cumulative effects of the Proposed Development in association with other development upon an individual or collection of environmental receptors would be noteworthy but not significant (positive or negative). These effects are likely to be raised as issues locally but not particularly notable • Effects at this level are unlikely to be of a nature that would be material in the decision-making process.
Negligible	• Where the cumulative effects of the Proposed Development in association with other development upon an individual or collection of environmental receptors would be negligible and not significant (positive or negative). Typically, these effects are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

2.15.29 Qualitative assessments have been undertaken to assess cumulative effects, rather than quantitative assessments (where relevant) by technical chapter authors. This is because quantitative assessments would rely on varying methodologies and underlying assumptions used for the other development. Therefore, a qualitative cumulative assessment that uses professional judgement is considered appropriate.

2.15.30 **Chapter 18: Summary [EN010163/APP/6.2.18]** provides a summary of the significant (beneficial and adverse) residual cumulative effects to provide clarity.

In-Combination Effects Assessment Approach

2.15.31 The interaction of two or more predicted environmental effects resulting from the Proposed Development may collectively cause a greater, or lesser, effect than each effect in isolation. Examples of types of interactive effects may include, for example effects of water discharges on ecology or effects of landscaping on ecology. Whilst some ES topics intrinsically assess in-combination effects as part of their

assessment approach by virtue of their methodologies, as set out in Table 2.10, there is still the potential for other in-combination effects to arise which are not captured through topic assessments and as such need to be considered. The potential for such effects are reviewed in the technical chapters of the ES.

2.15.32 In relation to the assessment of in-combination effects, NSIP- Advice Note Nine: Rochdale Envelope (2025) states that the assessment should *"ensure that the assessment of the worst case scenario(s) addresses impacts which may not be significant on their own but could become significant when they inter-relate with other impacts alone or cumulatively with impacts from other development (including those identified in other aspect assessments)"*.

2.15.33 NSIP: Advice on Cumulative Effects Assessment (2025) note has formed the basis of assessing cumulative effects between the Proposed Development and other developments. The advice however does not provide any guidance on assessing effect interactions resulting from different types of effects generated by the Proposed Development having an in-combination effect on the same receptor(s).

2.15.34 Guidance prepared by Hyder Consulting for the European Commission[26] defines 'effect interactions', differentiating them from cumulative effects between the Proposed Development and other developments, and provides some high-level guidance on how the results of the assessment should be presented. The assessment methodology presented below is based on this high-level guidance with professional judgement applied to inform the details of the methodology.

2.15.35 The approach to assessing effect interactions of ES topics that do not show clear intrinsically linked in-combination effects as part of their methodologies follows a three-stage process, as outlined in the following paragraphs.

Stage 1 – Topic Specific Assessment of Likely Significant In-combination Effects

2.15.36 The Assessment of Likely Significant Effects is presented in each of the technical chapters and comprises the individual assessments of residual effects on receptors across the construction, operation and decommissioning phases of the Proposed Development. The mitigation by design, additional mitigation and enhancements proposed in technical chapters is assumed to be implemented before consideration of the in-combination cumulative effects. Therefore, residual effects identified in

[26] Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, Hyder Consulting UK Limited, 1999

Chapters 6 to 17 [EN010163/APP/6.2.6 -EN010163/APP/6.2.17] of this ES have been considered.

Stage 2 – Identification of Receptors

2.15.37 Stage 2 identifies 'receptor groups' found within the technical chapters that require further assessment for in-combination effects. Not every individual receptor assessed within technical chapters is assessed but rather potentially sensitive 'receptor groups' are identified through the EIA process. Only receptors that are expected to incur more than one potential effect have been included in the assessment.

2.15.38 Receptors predicted to be affected by only a single effect are excluded because there is considered to be no potential for in-combination effects to take place. It should be noted that uncertainty in the assessment of effects, for most of the technical chapters in this ES, is dealt with by making conservative, or worst-case, assumptions.

Stage 3 – In-Combination Effects Assessment

2.15.39 An assessment is made of the potential for in-combination effects to arise for identified receptor groups for the construction, operation and decommissioning phase of the Proposed Development. This involves the assessment of the scope for all effects to interact, spatially and temporally, to create in-combination effects on a receptor group.

2.15.40 Where the in-combination effects of the Proposed Development would likely lead to a change in the significance of effects at a receptor group, when compared with considering these impacts in isolation, the in-combination effect would be determined as Significant.

2.15.41 Where the in-combination effects of the Proposed Development are likely to not lead to a change in the significance of effects at a receptor group, when compared with considering these impacts in isolation, the in-combination effect would be determined as Not Significant.

2.15.42 An assessment upon in-combination effects upon these receptor groups is then undertaken and presented in **Chapter 18: Summary [EN010163/APP/6.2.18]**.

2.15.43 Those ES topics that intrinsically assess in-combination effects as part of their assessment approach by virtue of their methodologies is set out in Table 2.11 below.

Table 2.11 – In-combination effects intrinsically assessed as part of the standard assessment approach for each ES topic

Environmental factor and scope of combined effects assessed within ES Chapters
Chapter 6 Landscape and Visual [EN010163/APP/6.2.6] considers the in-combination effects on landscape and visual receptors from glint and glare, with reference to the findings of **Chapter 16 Glint and Glare [EN010163/APP/6.2.16]**. It also considers the in-combination effects of the landscape and ecological mitigation proposals, which have been developed jointly by the authors of the two Chapters. Regard is also given to the in-combination effects on landscape features of the drainage proposals set out in **Chapter 8 Hydrology, Hydrogeology, Flood Risk and Drainage [EN010163/APP/6.2.8]**.
Chapter 7 Ecology and Biodiversity [EN010163/APP/6.2.7] considers the in-combination ecological effects on receptors such as area of land required, disturbance due to noise, changes in water quality, and loss of habitats.
Chapter 9 Cultural Heritage [EN010163/APP/6.2.9] considers the in-combination effects from different sources on archaeological and heritage assets such as visual and noise impacts affecting the setting of a heritage asset or hydrological impacts on below ground features.
Chapter 14 Air Quality [EN010163/APP/6.2.11] – considers in-combination effects from changes in traffic on human health and ecological receptors.
Chapter 11 Noise and Vibration [EN010163/APP/6.2.11] considers the in-combination effects of noise and vibration impacts on human, community, non-residential, commercial, and business receptors
Chapter 12 Traffic and Transport [EN010163/APP/6.2.12] considers the in-combination effects of changes in traffic and severance on people and community assets such as residential property, recreation infrastructure and existing businesses.

2.16 General Assumptions and Limitations

2.16.1 The principal assumptions that have been made and any limitations that have been identified in preparing this ES are set out below:

- All of the principal land uses adjoining the Proposed Development remain as present day, except where redevelopment proposals have been granted planning consent. In those cases, it is assumed the redevelopment proposals will be implemented or would but for the development being implemented;
- Information received from third parties is complete and up-to-date;
- The design, construction, operational and decommissioning phases of the Proposed Development will satisfy legislative requirements; and
- Requirements will be attached to the DCO with regards "mitigation", where considered necessary to make the development acceptable.

2.17 Consultation

2.17.1 Effective and meaningful engagement and consultation with stakeholders is an essential aspect of developing the design of the Proposed Development and of undertaking a comprehensive EIA.

2.17.2 The Applicant has carried out consultation and engagement iteratively, seeking feedback on the proposals at different stages of design development and environmental assessment from a range of stakeholders (PINS, the local community and a range of statutory and non-statutory consultees). This has sought to ensure that feedback of relevant statutory consultees and the local community has been considered and reflected in the Proposed Development.

2.17.3 The consultation process is described in the **Consultation Report [EN010163/APP/5.1]** that accompanies the DCO application. That document sets out the consultation activities undertaken, including with the EIA 'consultation bodies' (as defined in Regulation 3 of the EIA Regulations), the responses received, and explains where the comments have been addressed in the Application, or regard has been had to the comments by the Applicant.

Main Consultation Activities

Statutory Consultation

2.17.4 The Applicant undertook statutory consultations with regard to the Proposed Development in accordance with the requirements of the Planning Act 2008 and the EIA Regulations as follows.

2.17.5 The statutory consultation for the Proposed Development was held between 20th January 2025 – 3rd March 2025 to enable the public to review the proposed design of the Proposed Development and provide feedback.

2.17.6 A Preliminary Environmental Information Report (PEIR) was prepared and published with the consultation on 20th January 2025. The purpose of the PEIR was to enable the local community and other consultees to understand the likely environmental effects of the Proposed Development so as to inform their responses to the consultation.

2.17.7 The comments received in response to the statutory consultation have been used to produce the **Consultation Report [EN010163/APP/5.1**] in accordance with Section 37 of the Planning Act 2008, which is included as part of the DCO application. The Consultation Report accompanies the application and summarises the views and comments received and outlines how regard has been had to those comments in the Proposed Development design and EIA.

2.17.8 Technical consultation responses, and where these have influenced the development and assessment of the Proposed Development, is detailed in each technical chapter of the ES.

Meetings with Statutory Consultees and Stakeholders

2.17.9 A series of meetings have been held with a range of statutory and non-statutory consultees and stakeholders with an interest in the Proposed Development. Feedback received at these meetings has been considered in the Development design. Where relevant, the meetings are referred to in the relevant technical chapters of this ES. These meetings are also reported in the **Consultation Report [EN010163/APP/5.1**].