# Tween Bridge Solar Farm

## Environmental Statement
## Chapter 4: Approach to Environmental Impact Assessment

**Planning Act 2008**
**Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

**APFP Regulation 5(2)(a)**

**Document Reference: 6.1.4**

**August 2025**

**Revision 1**

**Table of Contents:**



**List of Tables:**



**List of Figures:**

**No table of figures entries found.**

# 4. Approach to Environmental Impact Assessment

## 4.1. Introduction

4.1.1. This chapter of the Environmental Statement (ES) sets out the approach taken to the Environmental Impact Assessment (EIA) process, explaining the methodology used to prepare the ES Environmental Aspect 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 Scheme. This chapter also includes summarised details of the consultation undertaken and the overall approach to the assessment of the effects of the Scheme.

4.1.2. Further details of the ES Environmental Aspect Chapter specific methodologies, such as survey methods, are provided in the relevant ES Environmental Aspect Chapter (**ES Chapters 6 – 17 [Document Reference 6.2.6-6.2.17]**).

4.1.3. 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.

**4.1.4.** This **ES Chapter 4 Approach to EIA [Document Reference 6.1.4]** is supported by the following appendices as part of ES Volume 3: Appendices:

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

- **ES Appendix 4.1 – Schedule 4 Requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended [Document Reference 6.3.4.1]**

## 4.2. Scope of Environmental Impact Assessment

### Methodology

4.2.1. Regulation 10(1) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) **[Ref. 4-1]** allows a person who proposes to make an application for an order granting development consent to ask the Planning Inspectorate, on behalf of the Secretary of State (the SoS), to state its written opinion as to the scope and level of detail of the information to be provided in the Environmental Statement (the ES). 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. The written opinion is called an EIA Scoping Opinion. The scoping request typically comprises a Scoping Report provided by the applicant and setting out the information required under Regulation 10(1) of the EIA Regulations.

4.2.2. On the 31 January 2023, the Applicant requested an EIA Scoping Opinion from the Planning Inspectorate. The request was accompanied by the Applicant's Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) which described the proposed 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 and operational and decommissioning phases of the Scheme. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the Scheme would not have the potential to give rise to significant environmental effects in these topic areas.

4.2.3. Following consultation with the statutory bodies, the Planning Inspectorate (on behalf of the SoS) adopted its EIA Scoping Opinion on the 13 March 2023 (see **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**). The key issues raised are summarised in the relevant ES Environmental Aspect Chapter, under the subheading 'Consultation.' The Planning Inspectorate EIA Scoping Opinion identified assessments that could be scoped out of the ES together with topics that do not require a full chapter within the ES,

either due to the brevity of the assessment or the small impact associated with the Scheme.

**Topics Scoped into the ES**

**4.2.4.** **Table 4-1** 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 4-1.**

**Table 4-1 : 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; | **ES Chapter 2 Scheme Description [Document Reference 6.1.2] and,**<br>**ES Chapter 3 Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3]** |
| (b) a description of the likely significant effects of the proposed development on the environment; | **ES Chapter 2 Scheme Description [Document Reference 6.1.2],**<br>**ES Chapter 3 Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3],**<br>**ES Chapter 6 Landscape and Visual Impact [Document Reference 6.2.6],**<br>**ES Chapter 7 Ecology and Nature Conservation [Document Reference 6.2.7],**<br>**ES Chapter 8 Cultural Heritage and Archaeology [Document Reference 6.2.8],**<br>**ES Chapter 9 Ground Conditions [Document Reference 6.2.9],**<br>**ES Chapter 10 Water Resource [Document Reference 6.2.10],**<br>**ES Chapter 11 Socio Economics [Document Reference 6.2.11],** |
| (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 | |

| | |
|---|---|
| | **ES Chapter 12 Transport and Access [Document Reference 6.2.12],**<br>**ES Chapter 13 Noise and Vibration [Document Reference 6.2.13],**<br>**ES Chapter 14 Air Quality and Greenhouse Gases [Document Reference 6.2.14],**<br>**ES Chapter 15 Agriculture Circumstances [Document Reference 6.2.15],**<br>**ES Chapter 16 Other Environmental Topics [Document Reference 6.2.16], and**<br>**ES Chapter 17 Cumulative Impacts [Document Reference 6.2.17.** |
| (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; | **ES Chapter 3 Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3]** |
| (e) a non-technical summary of the information referred to in subparagraphs (a) to (d); and | **ES Appendix 1.0 Non-Technical Summary [Document Reference 6.3.1.0]** |
| (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 [Document Reference 6.3.4.1]** |

### Topics Scoped out of the ES

4.2.5. The EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) proposed that several topics are not likely to cause significant effects, therefore not requiring a full chapter within this ES, in which the Planning Inspectorate agreed on 13 March 2023 via the formally adopted EIA Scoping Opinion (see **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**). **Table 4-2** summarises why those environmental themes are scoped out of the ES.

**Table 4-2 : Environmental themes either scoped out of the ES or not requiring a full chapter.**

| Environmental Topic | How/ Where Addressed / Reason for Scoping in or Out |
|---|---|
| Major Accidents and Disasters (Accidents and Emergencies) | The nature, scale and location of the Scheme is not considered to be vulnerable to or give rise to significant impacts in relation to the Risk of Accidents and Major Disasters[2]. Potential effects relating to soil conditions, surface water flooding and climate change are all considered in other EIA assessments. Therefore, a standalone EIA chapter for 'Risk of Major Accidents and Disasters' was confirmed not to be included as specified in **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]** provided by the Planning Inspectorate. Risk of Major Accidents and Disasters is proportionately assessed within **ES Chapter 16 Other Environmental Topics [Document Reference 6.2.16]** rather than a standalone ES Chapters. The EIA Scoping Opinion confirmed that this approach was acceptable. The Planning Inspectorate requested through their EIA Scoping Opinion that risk of fire/ explosion at the BESS should be assessed and if required, relevant mitigation should be proposed. Risk |

[2] No definition of 'major accidents and disasters' is provided in the EIA Regulations, however the IEMA Quality Mark 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."

| | |
|---|---|
| | of battery fire and explosion is addressed at **ES Chapter 16 Other Environmental Topics [Document Reference 6.2.16]** and additionally an **Outline Battery Safety Management Plan [Document Reference 7.4]** 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 Scheme (construction, operation and decommissioning) the Applicant will 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 Environmental Management Plan [Document Reference 7.1]** is submitted with the DCO application, which would inform the Construction Environmental Management Plan at the detailed design stage. Similarly, an **Outline Decommissioning Environmental Management Plan [Document Reference 7.3]** is submitted which will inform the Decommissioning Environmental Management Plan when the lifetime of the Scheme has expired. |
| Climate Change and Climatic Factors | The Applicant's Scoping Report (see **ES Appendix 1.2 – Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) proposed how climate change will be assessed within **ES Chapter 16 Other Environmental Topics [Document Reference 6.2.16]** and that climatic factors will be assessed *"…within the relevant technical assessments such as flood risk",* rather than in standalone ES Chapters. A Climate Change Adaptation and Resilience assessment (see **ES Appendix 16.4)** supports **ES Chapter 16 Other Environmental Topics [Document Reference 6.2.16]**). Carbon saving and impacts from greenhouse gas (GHG) emissions is assessed in **ES Chapter 14 Air Quality and Greenhouse Gases [Document Reference 6.2.14].** The **ES Appendix 1.1 – Planning** |

| | |
|---|---|
| | **Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) provided by the Planning Inspectorate confirmed that this approach was acceptable. |
| Human Health | The potential effects on human health are considered proportionately within relevant ES chapters, including **ES Chapter 6 Landscape and Visual Impact [Document Reference 6.2.6], ES Chapter 11 Socio Economics [Document Reference 6.2.11], ES Chapter 13 Noise and Vibration [Document Reference 6.2.13],** and **ES Chapter 14 Air Quality and Greenhouse Gases [Document Reference 6.2.14].** No standalone 'Human Health' ES chapter is provided, and therefore the scope of effects on Human Health have been shaped by the relevant chapter assessment criteria and scope of works. The **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) provided by the Planning Inspectorate confirmed that this approach was acceptable. |
| Waste | The Applicant's EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) proposes that impacts associated with waste will be assessed within **ES Chapter 16 Other Environmental Topics [Document Reference 6.2.16]**, rather than in a standalone ES Chapter. The Planning Inspectorate has considered the nature and characteristics of the Scheme and is content with this approach as confirmed in **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**). The Scoping Opinion additionally advised "*…Having regard to the nature and characteristics of the Proposed Development, the Inspectorate is content that impacts associated with waste produced during the operational phase are not likely to result in significant effects. This matter can be scoped out of the ES*." An **Outline Construction Environmental Management Plan [Document Reference 7.1], Outline Operational** |

| | |
|---|---|
| | **Environmental Management Plan [Document Reference 7.2]** and **Outline Decommissioning Environmental Management Plan [Document Reference 7.3]** is submitted with this DCO application securing measures of how waste would be managed in accordance with the waste management hierarchy which would inform the final Plans. |
| Ecology and Nature Conservation - Detailed assessment of ecological features that are not considered 'important' (all phases) | The Applicant's EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) proposes that the ES will only contain a detailed assessment of impacts on 'important' ecological features (as per the CIEEM Guidelines) within **ES Chapter 7 Ecology and Nature Conservation [Document Reference 6.2.7].** Identification of important ecological features and those features that can be scoped into or out of the have been discussed with Natural England and the relevant LPAs. Table 7.8 of **ES Chapter 7 Ecology and Nature Conservation [Document Reference 6.12.7]** presents the evaluation of identified ecological features and provides the rationale as to why individual features have been included or 'scoped out' of the detailed assessment. The Applicant would seek to set out the position reached within a draft Statement of Common Ground during Examination. |
| Ecology and Nature Conservation - Indirect impacts on statutory designated sites (without mobile qualifying features) located over 2km from the site – all phases | The Planning Inspectorate Scoping Opinion (**ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) was content that this matter can be scoped out for the operational phase of the Scheme. **ES Chapter 7 Ecology and Nature Conservation [Document Reference 6.2.7]** however assesses any likely significant effects on statutory designated sites including those located over 2km from the Order Limits resulting from hydrological changes and water quality impacts, during construction and decommissioning. |
| Transport and Access – | The Applicant's EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document** |

| | |
|---|---|
| Impact on pedestrians (severance, delay, amenity and fear/ intimidation) | **Reference 6.3.1.2]**) proposes that due to the limited number of pedestrians anticipated within the vicinity of the Order Limits, impacts to pedestrians in terms of severance, delay, amenity and fear/ intimidation will not be assessed. The Planning Inspectorate Scoping Opinion (**ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) was content that this matter can be scoped out for the operational phase, but not in relation to the construction and decommissioning phases. |
| Air Quality and Greenhouse Gases – Road traffic and GHG emissions - decommissioning | The Applicant's EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) proposes to scope out an assessment of air quality impacts related to the decommissioning of the Scheme on the basis that road traffic and GHG emissions at the time of decommissioning are expected to be zero. The Planning Inspectorate Scoping Opinion (**ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) agreed that these matters can be scoped out of **ES Chapter 14 Air Quality and Greenhouse Gases [Document Reference 6.2.14].** |
| Air Quality and Greenhouse Gases – Road traffic and GHG emissions - operation | The Applicant's EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) proposes to scope out these matters on the basis that traffic movements during operation are expected to be minimal. The Planning Inspectorate Scoping Opinion (**ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) agreed that these matters can be scoped out of **ES Chapter 14 Air Quality and Greenhouse Gases [Document Reference 6.2.14].** |
| Air Quality and Greenhouse Gases – | The Applicant's EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) agreed that on the basis that the |

| | |
|---|---|
| Detailed assessment of construction traffic impacts on ecological sites | Decision Making Thresholds set out by the Joint Nature Conservation Committee are not exceeded and that the roads affected by the Scheme are more than 200m from any designated site. The Planning Inspectorate Scoping Opinion (**ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) agrees that a detailed assessment of construction traffic impacts on ecological sites can be scoped out of **ES Chapter 14 Air Quality and Greenhouse Gases [Document Reference 6.2.14].** |
| Glint & Glare | The Applicant's EIA Scoping Report (**ES Appendix 1.2 - Applicant EIA Scoping Report [Document Reference 6.3.1.2]**) is content that a standalone ES Chapter for Glint and Glare is not required. A Glint and Glare Assessment would instead be presented as a standalone report submitted as a technical appendices (see **ES Appendix 16.1 & 6.2– Glint and Glare Assessment [Document Reference 6.3.16.1 & 6.3.16.2]**). **ES Chapter 16 Other Environmental Topics [Document Reference 6.2.16]** contains a summary of the assessment in the technical appendices and identifies any significant effects resulting from glint and glare, as agreed through the Planning Inspectorate Scoping Opinion. As there are two design options being assessed within the EIA, there are two separate Glint and Glare assessments, to ensure that the possible effects of the two designs are considered. |
| 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. It is not considered that there are any further 'material assets' to those already addressed within **Chapter 6 Landscape and Visual Impact [Document Reference 6.2.6], ES Chapter 8 Cultural Heritage and Archaeology [Document** |

| | |
|---|---|
| | **Reference 6.2.8], ES Chapter 9 Ground Conditions [Document Reference 6.2.9],** and **ES Chapter 11 Socio Economics [Document Reference 6.2.11].** Therefore, no separate consideration of 'material assets' is considered necessary. |

**Transboundary Effects**

4.2.6. 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.

4.2.7. 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."*

4.2.8. 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"*

4.2.9. Regulation 32 also obligates the Secretary of State (or Planning Inspectorate 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.

4.2.10. The Planning Inspectorate Scoping Opinion (see **ES Appendix 1.1 – Planning Inspectorate EIA Scoping Opinion [Document Reference 6.3.1.1]**) outlined, that given the nature, scale and location of the Scheme, the Planning Inspectorate does not consider that the Scheme is likely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State. The Planning Inspectorate considered that the likelihood of transboundary effects resulting from the Scheme are so low that it does not warrant the issue of a detailed transboundary screening[3].

## 4.3. General Assessment Approach

4.3.1. 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.

4.3.2. 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) below and Schedule 4 of the EIA Regulations detailed in **ES Appendix 4.1 – Schedule 4 Requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended [Document Reference 6.3.4.1]**

4.3.3. 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."*

**Policy and Guidance**

4.3.4. In preparing the ES, reference has been made to the following key government or institute guidance's:

- Planning Act 2008: Pre-application stage for Nationally Significant Infrastructure Projects) **[Ref. 4-2]**;
- Overarching National Policy Statement for Energy (NPS EN-1) **[Ref. 4-3];**
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) **[Ref. 4-4]**;
- National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) **[Ref. 4-5]** ;
- Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation (2025) **[Ref. 4-6]**;
- Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents (2025) **[Ref. 4-7];**

- Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope (2025) **[Ref. 4-8];**
- Nationally Significant Infrastructure Projects - Advice on working with public bodies in the infrastructure planning process (2025) **[Ref. 4-9];**
- Nationally Significant Infrastructure Projects : Advice on Cumulative Effects Assessment (2025) ) **[Ref. 4-10];**
- Nationally Significant Infrastructure Projects : Advice on Transboundary Impacts and Process (2025) Advice on Cumulative Effects (2024) **[Ref. 4-11];**
- Environmental Impact Assessment Guide to: Shaping Quality Development (2015) **[Ref. 4-12];**
- Environmental Impact Assessment Guide to: Delivering Quality Development (2016) **[Ref. 4-13];**
- Health in Environmental Impact Assessment: A Primer for a Proportional Approach (2022) **[Ref. 4-14];**
- Delivering Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice (2017) **[Ref. 4-13];**
- IEMA Guide to: Materials and Waste in Environmental Impact Assessment- Guidance for a Proportionate Approach (2020) **[Ref. 4-14];**
- IEMA Guide: A New Perspective on Land and Soil in Environmental Impact Assessment (2022) **[Ref. 4-15];**
- IEMA Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance. 2nd Edition (2022) **[Ref. 4-16];**
- IEMA Guide: Major Accidents and Disasters in EIA: A Primer (2020) **[Ref. 4-17];** and
- IEMA Guide: Environmental Assessment of Traffic and Movement (2023) **[Ref. 4-18].**

4.3.5. Further consideration of legislative and planning policy context is documented in **ES Chapter 5 Policy and Legislative Context [Document Reference 6.1.5]** of this ES, and topic specific policy and guidance have been considered within each of

the ES Environmental Aspect Chapters, set out within **Chapters 6-16 [Document Reference 6.2.6 -6.2.16]** of the ES.

**Development Parameters and the Rochdale Envelope**

4.3.6. The design of the Scheme 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, the assessment of the Scheme in this ES 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.

**4.3.7.** The Scheme subject to this EIA is described in more detail within **ES Chapter 3 Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3]** and **ES Chapter 2 Scheme Description [Document Reference 6.1.2].** Together, these contain the parameters and controls defining those aspects of the Scheme capable of having significant environmental effects, as defined in the EIA Regulations.

4.3.8. Where flexibility is required, NSIP - Advice Note Nine: Rochdale Envelope (2025) 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 Scheme. This involves assessing the maximum (and where relevant, minimum) parameters, size (footprint, width, and height) technology, and locations of the different elements of the Scheme for the elements where flexibility needs to be retained, recognising that the worst-case parameter for one technical assessment may differ from another.

4.3.9. Any assumptions made regarding the maximum design scenarios have been identified in each of the ES Environmental Aspect Chapters and have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group.

4.3.10. To assist with the interpretation of the Rochdale Envelope, a set of four plans **ES Figure 2.1 Indicative Construction Layout Plan [Document Reference 6.4.2.1], ES Figure 2.2a Indicative Operational Layout Plan (Fixed Solar Panel) [Document Reference 6.4.2.2], Figure 2.2b Indicative Operational Layout Plan (Fixed and Tracker Solar panel) [Document Reference 6.4.2.2],** and **ES Figure 2.3 Height Parameters Zonal Plan [Document Reference 6.4.2.3]** have been created to provide a visual representation against the set parameters that define the maximum spatial extent of each aspect of the Scheme, and against which the EIA

has assessed against. The maximum parameters that have been used for the purpose of the ES assessment are set out in **ES Chapter 2 Scheme Description [Document Reference 6.1.2].**

4.3.11. Since the PEIR, environmental assessments have progressed, and **ES Figure 2.1 Indicative Construction Layout Plan [Document Reference Document Reference 6.4.2.1], ES Figure 2.2a Indicative Operational Layout Plan (Fixed Solar Panel) [Document Reference 6.4.2.2], Figure 2.2b Indicative Operational Layout Plan (Fixed and Tracker Solar panel) [Document Reference 6.4.2.2],** and **ES Figure 2.3 Height Parameters Zonal Plan [Document Reference 6.4.2.3]** have been further amended to incorporate further mitigation within the design of the Scheme. Details of the design progression of the Indicative Site Layouts are set out in **ES Chapter 3 Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3]**.

4.3.12. **ES Environmental Aspect Chapters 6 to 17** of this ES **[Document Reference 6.2.6 -6.2.17]** describe the parameters applied in relation to the particular discipline. As the design of the Scheme has evolved, key elements of the design have been fixed. However, flexibility has been maintained for some aspects of the Scheme 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 **ES Chapter 3 Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3]**.

4.3.13. **Design Approach Document Appendix A: Parameters Document [Document Reference 5.6.1]** contains a summarised version of the guiding principles for the design parameters of the Scheme, secured within the **draft DCO [Document Reference 3.1].** The **Works Plans [Document Reference 2.1]** details the infrastructure comprising the Scheme and illustratively sets out the spatial parameters of the 'works numbers' detailed in Schedule 1 of the **draft DCO [Document Reference 3.1].**

## 4.4. Environmental Impact Assessment Methodology

4.4.1. The contents of the ES has been based upon: -

- The extents of the Order Limits (see **ES Figure 1.1 Order Limits [Document Reference 6.4.1.1]**) and Scheme Description (see **ES Chapter 2 Scheme Description [Document Reference 6.1.2]**),

- Review of the baseline conditions through existing information, including data, reports, site surveys and desktop studies available and undertaken to date,
- Consideration of the relevant National Policy Statement (NPSs)[4], National Planning Policy Framework (NPPF), Planning Inspectorate Technical Advice Notes[5] 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 and knowledge,
- Modelling and calculations,
- Use of relevant technical and good practice guidance, and
- Specific consultations with appropriate bodies.

4.4.2. Each ES Environmental Aspect Chapter defines the scope of the assessment within the methodology section, together with details of the study area, desk study and survey work undertaken. Each ES Environmental Aspect Chapter has been considered by a specialist in that area.

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

**Structure of the Environmental Aspect Chapters**

4.4.4. Throughout the EIA process, the likely significant environmental effects of the Scheme have been assessed. Within each of the Environmental Aspect Chapters of the ES, the information which will inform the EIA process will generally follow the structure below:

[4] In particular NPS EN-1, NPS EN-3 and EN-5

[5] In particular Advice Note 3, 7, 9, 11 and 17.

4.4.5. Introduction – to introduce the topic under consideration, state the purpose of undertaking the assessment and set out those aspects of the Scheme material to the topic assessment;

- Consultation – provide responses to consultation to consultation in relation to method and scope in each case pertinent to the topic under consideration;
- Assessment Approach – to describe the method and scope of the assessment undertaken;
- Baseline Conditions – a description of the baseline conditions pertinent to the topic under consideration including baseline survey information;
- Assessment of Likely Significant Effects - identifying the likely effects, evaluation of those effects and assessment of their significance, considering construction, operational (including maintenance) and decommissioning and direct and indirect effects. The assessment considered mitigation by design (embedded mitigation) and in some cases mitigation measures controlled through Outline Management Plans **[Document Reference 7.1-7.9]** (see paragraph 4.4.36 for full details) into this assessment;
- Mitigation, Enhancement and Residual Effects - describing the additional mitigation strategies for the significant effects identified and noting any residual effects of the Scheme and their significance once additional mitigation is applied; and
- Summary – a summary of the chapter, including baseline conditions, likely significant effects, mitigation and conclusion. At the end of Environmental Aspect Chapters, a table is provided summarising the significance of effects with the Scheme in place, mitigation and/or enhancement measures if applicable, and residual effects of the Scheme with mitigation and/or enhancement in place.

**Determining Baseline Conditions**

4.4.6. The existing and likely future environmental conditions in the absence of the Scheme are known as 'baseline conditions.' Each ES Environmental Aspect Chapter includes a description of the current (baseline) environmental conditions. The baseline conditions within the Order Limits and within the study area form the basis of the assessment, against which the likely significant effects are assessed.

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

4.4.8. 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 **[Ref. 4-20]** which provides information on plausible changes in climate for the UK.

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

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

4.4.10. ES Environmental Aspect 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.

4.4.11. The full results from all baseline data collection and surveys are described within **ES Chapters 6-16 [Document Reference 6.2.6 -6.2.16]** of the ES, as well as any limitations and assumptions with the data.

**Spatial Scope**

4.4.12. 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 **ES Chapters 6-16 [Document Reference 6.2.6 -6.2.16]** of the ES. Specific study areas are defined in each Environmental Aspect 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 Scheme. The study area is also used to inform the assessment of cumulative effects within **ES Chapter 17 Cumulative Impacts [Document Reference 6.2.17].**

**Temporal Scope**

4.4.13. Specific temporal periods are defined for the assessment of baseline conditions and the impacts of the Scheme. 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.

4.4.14. Timescales associated with these enduring effects in all phases 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.

4.4.15. If there is any variation with the above time periods, then this is set out within the respective ES Environmental Aspect Chapter

Construction Phase

4.4.16. 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

4.4.17. Operational effects are the effects that are associated with operational and maintenance activities during the generating lifetime of the Scheme. This includes the effects of the physical presence of the Scheme, and its operation, use and maintenance.

Decommissioning Phase

4.4.18. Decommissioning effects are changes resulting from activities beginning and ending during the decommissioning stage. This covers effects related to decommissioning the Scheme 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.

4.4.19. Decommissioning phase effects are set out and assessed separately to construction and operation phase effects in each of the ES Environmental Aspect Chapters. In some cases, given the inherent uncertainty on the scope of decommissioning activities and the relevant environmental conditions prevalent at the time, the ES Environmental Aspect 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.

**Assessment Years**

4.4.20. The approach to assessment has incorporated the use of identified assessment years to allow for preliminary evaluation of the likely effects during the phases of the Scheme. 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 Scheme) in 2028-2032 (construction phase), 2032-2072 (operational phase) and 2072 (decommissioning phase) is set out for each topic, where needed, within the respective chapter. These assessment years are explained below;
- Construction (2028-2032) (With the Scheme): - The length of the construction programme for the purposes of the EIA is anticipated to be 2028-2032, in a phased approach. This assumes that the Scheme is built over a 54-month period;
- Operation (2032-2072) (With the Scheme): - This assumes that the Scheme will be operational during the latter part of 2032 and is determined by the timeframe National Grid has stated within their Grid Offer for completion of the connection;

- Decommissioning (2072) –It is proposed that the Scheme will be decommissioned after 40 years of operation. Decommissioning will take approximately 24 months potentially in a phased approach.

**Determining Significance of Effects**

4.4.21. 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
- Negligible – a neutral effect to an environmental resource or receptor.

4.4.22. 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.

4.4.23. The broad criteria for determining magnitude are set out in **Table 4-3**. It is worth noting that the degrees of magnitude defined in the table below can be both positive and negative, as a development can result in a positive effect on the environment.

**Table 4-3: 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. |

4.4.24. The sensitivity of a receptor is based on the relative importance of the receptor using the scale in **Table 4-4.**

**Table 4-4: Degrees of Sensitivity and their Criteria**

| Magnitude of Effect | 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 high and more than local (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 |

4.4.25. 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.

4.4.26. Receptor sensitivity and magnitude of change away from the baseline conditions is used to determine the resultant effect, and assigned in accordance with **Table 4-5**, whereby effects assigned a rating of 'Major' or 'Moderate' would be considered as 'significant'.

**Table 4-5: Levels of Effect Degrees of Significance**

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

**Table 4-6: Definition of Impact of Significance**

| Impact Significance | Definition |
|---|---|
| Major Adverse | Very large or large change in receptor condition, which are likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or, could result in exceedance of statutory objectives and/or breaches of legislation |
| Moderate adverse | Intermediate change in receptor condition, which are likely to be important considerations at a local level |
| Minor adverse | Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision-making process. |
| Negligible | No discernible change in receptor condition. |

| | |
|---|---|
| Minor beneficial | This impact is of minor significance but has been assessed as having some environmental benefit. |
| Moderate beneficial | This impact is assessed as providing a moderate gain to the environment |
| Major beneficial | This impact is assessed as providing a significant positive gain to the environment |

4.4.27. The above magnitude and significance criteria are provided as a guide for specialists to categorise the significance of effects within the ES. It is noted that not all environmental factors use the matrix based approach but instead use numerical values (such as noise impacts). The approach towards numerical values would be detailed within the relevant ES Environmental Aspect Chapter.

4.4.28. Where discipline-specific methodology has been applied that differs from the generic criteria above, this will be clearly explained under the heading of 'Assessment Approach.'

4.4.29. The shaded cells in **Table 4-5** denotes where the environmental effect is assessed as having a 'major' or 'moderate' degree of significance it is deemed to be 'significant'. When such a significant effect occurs consideration of additional mitigation solutions or enhancements to minimise the effect (which can include design alterations) will be considered. Mitigation by Design (embedded mitigation) is considered as part of the initial 'Assessment of Likely Effects' within ES Environmental Aspect Chapters, and in some cases mitigation measures controlled through Outline Management Plans **[Document Reference 7.1-7.9]** (see paragraph 4.4.36 for full details).

4.4.30. Once the additional mitigations and enhancements have been assessed the degree of significance may decrease to minor/moderate, minor or negligible. If such a level of environmental effect occurs the Scheme is no longer considered as creating a "significant effect." If an environmental effect remains "significant" (i.e. major/moderate) the determining authority must consider these significant effects in the planning balance to be carried out in determining the application. Significant negative environmental effects will form adverse impacts, and significant positive environmental effects will form benefits, of which both are respectively to be weighed up in the planning balance.

4.4.31. 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.

**Mitigation**

4.4.32. The EIA Regulations (Regulation 14(2)(c) and paragraph 7, Schedule 4) require that where 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 and, where appropriate, of any proposed monitoring arrangements'* should be provided.

4.4.33. The development of mitigation measures is part of the iterative EIA process. Where the assessment of the Scheme has identified potential for significant adverse environmental effects, the scope for mitigation of those effects has been considered and is outlined in the appropriate ES Environmental Aspect Chapter. It is assumed that such measures would be secured by appropriate DCO requirements.

4.4.34. The Scheme 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.

4.4.35. 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.

4.4.36. The ES Environmental Aspect Chapters included within this ES consider the following mitigation types:

- Mitigation by Design measures included as part of the Scheme design (sometimes referred to as 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 Scheme. This is mitigation that would inherently be delivered and is therefore considered to form part of the Scheme and has been considered in the assessment of effects of the EIA;

- In some instances, within the ES Environmental Aspect Chapters, the mitigation measures within relevant Outline Management Plans **[Document References 7.1-7.9]** have been considered as embedded mitigation. This is because some control measures within relevant Outline Management Plans are considered intrinsic to allow the Scheme to be brought forward. Individual Environmental Aspect Chapters will detail in the 'Assessment Approach' section of each chapter if relevant Outline Management Plans are considered as embedded mitigation, rather than the general default position of Outline Management Plans considered as additional mitigation, as set out below. If relevant Outline Management Plans are considered as embedded mitigation in the individual Environmental Aspect Chapters, those measures will have been considered as part of the initial 'Assessment of Likely Effects' within ES Environmental Aspect Chapters.

- Measures proposed to avoid effects occurring or to minimise environmental effects, and are not included within the design (referred to as additional mitigation and generally this takes the forms of mitigation measures detailed within relevant Outline Management Plans **[Document References 7.1-7.9]**); and

- Measures proposed that bring additional benefits to the Scheme but are not necessary to make the Scheme acceptable (referred to as enhancements).

- 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 Scheme and the methods of its construction from the outset.

4.4.37. As the EIA has progressed, further work in relation to mitigation measures has been undertaken and informed the design of the Scheme for which development consent is sought. This is reflected in this ES. The **draft DCO [Document Reference 3.1]** has been developed to be consistent with the measures identified in this ES and any draft management plan, in order to ensure consistent implementation of the measures identified through the EIA.

**Residual Effects**

4.4.38. 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 Scheme. This approach allows for all deliverable and

committed mitigation to be considered in determining the significance of effects reported in this ES.

4.4.39. In some instances where ES Environmental Aspect Chapters have considered Outline Management Plans **[Document References 7.1-7.9]** as embedded mitigation (see paragraph 4.4.26 above), the 'Residual Effects' assessment will be the same as the initial 'Assessment of Likely Effects', and may not be repeated. This will be clearly detailed within ES Environmental Aspect Chapters if this is the case.

**Monitoring**

4.4.40. 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.

4.4.41. Monitoring measures would be undertaken as required during construction, operation and decommissioning. These measures will be secured in the DCO application through the Outline Management Plans for the Scheme, including:

- **Outline Construction Environmental Management Plan [Document Reference 7.1]**
- **Outline Operational Environmental Management Plan [Document Reference 7.2]**
- **Outline Decommissioning Environmental Management Plan [Document Reference 7.3]**
- **Outline Battery Safety Management Plan [Document Reference 7.4]**
- **Outline Ecological Construction Management Plan [Document Reference 7.5]**
- **Outline Landscape and Ecological Management Plan [Document Reference 7.6]**
- **Outline Construction Traffic Management Plan [Document Reference 7.7]**
- **Outline Soil Management Plan [Document Reference 7.8]**

- **Outline Supply Chain, Employment and Skills Plan [Document Reference 7.9]**

4.4.42. Monitoring measures are reported, where applicable, in **ES Chapters 6-16 [Document Reference 6.2.6 -6.2.16]** of the ES and are secured (where necessary) through DCO requirements.

## 4.5. Cumulative and In-Combination Effects

4.5.1. In accordance with the EIA Regulations, the Applicant will consider cumulative effects. With respect to cumulative effects, Schedule 4, paragraph 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…."*

4.5.2. Cumulative effects consider the impacts of other 'reasonably foreseeable' developments within the vicinity and context of the Scheme.

4.5.3. 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.

### Cumulative Effects Assessment

4.5.4. 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

4.5.5. 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.

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

4.5.7. **ES Chapter 17 Cumulative Impacts [Document Reference 6.2.17]** provides a cumulative effects assessment, in line with the Planning Inspectorate Advice Note Seventeen Cumulative Effects Assessment, and full details of the methodology used for the cumulative effects assessment is provided in this Chapter. **ES Appendix 17.1 – Cumulative Long List [Document Reference 6.3.17.1]** and **ES Appendix 17.2 – Cumulative Short List [Document Reference 6.3.17.2** supports **ES Chapter 17 Cumulative Impacts [Document Reference 6.2.16]** detailing the relative lists of existing and/or approved developments within the search area. The shortlisted cumulative developments for potential assessment in the EIA is illustrated in **ES Figure 17.1 Cumulative Sites [Document Reference 6.4.17.1].**

**In-Combinations Effect Assessment**

4.5.8. The interaction of two or more predicted environmental effects resulting from the Scheme 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.

4.5.9. Whilst some ES Environmental Aspect Chapters intrinsically assess in-combination effects as part of their assessment approach by virtue of their methodologies, there is still the potential for other in-combination effects to arise which are not captured through topic ES Environmental Aspect Chapter assessments and as such need to be considered. Therefore, in **ES Chapter 17 Cumulative Impacts [Document Reference 6.2.17]** a coordinated assessment is provided of potential in-combination environmental effects and a summary table is provided of the in-combination effects identified.

## 4.6. General Assumptions and Uncertainty

**Addressing Uncertainty in Assessment**

4.6.1. There is always 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 or 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.

4.6.2. The Applicant is adopting the Rochdale Envelope approach for the EIA to allow for some flexibility in the design. Two design considerations for the solar PV module technology are assessed within the ES. Layout Option 1 is a mixed design with both fixed and tracker panels. In this design the majority of the Scheme will be fixed panels, with areas of tracker panels in the northern and western section of the Order Limits. The areas where fixed or tracker panels would be used has been defined in the assessment parameters. **ES Figure 2.2b Indicative Operational Layout Plan (Fixed and Tracker Solar panel) [Document Reference 6.4.2.2],** shows the extent of the fixed and tracker panel areas. Layout Option 1 (mixed design) was assessed in the PEIR and considered in the statutory consultation process. Layout Option 2 is for the entirety of the Scheme to be a fixed panel design, as illustrated in **ES Figure 2.2a Indicative Operational Layout Plan (Fixed Solar Panel) [Document Reference 6.4.2.2].** Both indicative designs fit within the same locational parameters for the solar PV module area (Works No. 1), as set out in **Works Plans [Document Reference 2.1]**. Further details on the solar PV module technology optionality are set out **in ES Chapter 2- Scheme Description [Document Reference 6.1.2].** The ES Environmental Aspect Chapters will set out in the 'Assessment Approach' section of each chapter whether the flexibility sought for the solar PV module technology will alter the assessment of effects, significant of effect conclusion and/or mitigation measures as set out in the respective 'Assessment of Likely Effects' and 'Residual Effects' sections. Should, the author of the individual ES Environmental Aspect Chapter determine the two options will result in two judgements, this will be set out in the respective 'Assessment of Likely Effects' and 'Residual Effects' sections under subheading of 'Option 1 - Fixed and Tracker solar PV design' and 'Option 2 – Fixed solar PV design'. In general, the authors of the ES Environmental Aspect Chapters have determined the flexibility sought for the solar PV module technology does not materially change the assessments because the solar PV module layouts are contained within the same location parameter extents and the technical detail (height, width and length) are the same for both technologies, therefore only one set of judgements are provided and assess both designs.

4.6.3. 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.

4.6.4. 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, taking into account topic-specific good practice and guidance. Calibration has been used to ensure a reasonable degree of accuracy in measurements. ES Environmental Aspect Chapters set out measures taken to address any uncertainty with regard to modelling inputs and outputs and any assumptions made.

**Assumptions**

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

- The Applicant has a Bilateral Connection Agreement from National Electricity System Operator Limited (NESO) for the connection of the Scheme to the transmission network. The Applicant has received a grid connection offer from NESO offering connection to a new National Grid Electricity Transmission (NGET) 400kV Substation with an export capacity of 800MW. The agreement identifies that a new NGET 400kV substation, which is to be consented and delivered separately by NGET, would be required to increase capacity on the network to facilitate delivery of the Scheme, and other potential projects which could be brought forward on the same network. NGET has commenced their siting process for the NGET 400kV substation, and the exact location of the NGET 400kV substation will not be confirmed until this process is concluded. The final location of the NGET 400kV substation will be dependent on many factors such as technical, design and environmental factors, as well as other factors outside the control of the Applicant. Following the conclusion of the substation siting work, NGET would then progress a separate consenting process for the NGET 400kV substation and would own and operate the NGET 400kV substation following construction.

- A 400kV export connection cable will be required to connect the Scheme to the new NGET 400kV substation ("the 400kV export connection cable"). As the location of the new NGET 400kV substation is not yet known, it is not possible at this stage for the Applicant to identify and assess the potential route options the 400kV export connection cable would take from the RWE on-site 400kV substation to the NGET 400kV substation, nor the new NGET 400kV substation itself until the location of the NGET 400kV substation has been confirmed. Therefore, these two infrastructure elements (new NGET 400kV substation and 400kV export connection cable) do not form part of

the Scheme and are not assessed within this ES. Additionally, the new NGET 400Kv substation and 400kV export connection cable are not considered within the cumulative assessment in **ES Chapter 17 Cumulative Impacts [Document Reference 6.2.17],** with full details of the cumulative effects assessment methodology and rationale for potential cumulative schemes for assessment set out within **ES Chapter 17 Cumulative Impacts [Document Reference 6.2.17].**The construction phase assumes the Scheme is built out up to a 54 month-period in either a single, consecutive approach (development of land parcels completed one after another with the potential for breaks between development of land parcels) or through multiple stages (development of land parcels concurrently). For the multiple stage construction option, no more than two land parcels (within land parcels A-E) would be built out at the same time. ES Environmental Aspect Chapters determine in the methodology 'Assessment Approach' section what construction phasing approach would give rise to the worst-case scenario for the purpose of assessment. The current connection date for the Scheme, within the NESO Connection Agreement is 2029. As with all electricity generation projects, this date is under review by NESO as part of the ongoing connections reform process.

- If the NESO Connection Agreement remains with the connection date of 2029, it would be possible to operate a phased start to operational generation. This phased approach would connect each Land Parcel to a connection point when construction of that Land Parcel was completed. In this operational scenario there would be partial Scheme operation from 2029-2032 (3 years). From 2032 onwards the full Scheme would be generating at full operational capacity. The full Scheme would operate for 40 years until 2072. If the NESCO Grid Connection date varies, which is not within the Applicants direct control, the timeframe where there could be partial operation of the Scheme could reduce or fail to materialise. In this situation the full operational Scheme would operate for 40 years until 2072. In either connection scenario there will be full operational generation for 40 years, which would be the worst-case scenario operational time period for the Scheme. Following 40- years of a fully operational Scheme, it is proposed that the Scheme will be decommissioned. This decommissioning with take approximately 24 months and will be in a phased approach. The final construction programme will depend on the detailed layout, design and potential environmental constraints on the timing of construction activities. An indicative overview of the final construction programme will be set out in the Construction Environmental Management Plan(s) for information.

- All of the principal land uses adjoining the Scheme 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 Scheme will satisfy legislative requirements; and
- Requirements will be attached to the DCO with regards "mitigation," where considered necessary to make the Scheme acceptable.

## 4.7. Consultation

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

4.7.2. The Applicant has carried out consultation and engagement iteratively, seeking feedback on the Scheme at different stages of design development and environmental assessment from a range of stakeholders (Planning Inspectorate, 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 Scheme.

4.7.3. The consultation process is described in the **Consultation Report [Document Reference 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

Non Statutory Consultation

4.7.4. The non-statutory consultation served to introduce the local community to the Scheme and to provide an early opportunity to shape the evolving design. The non-statutory consultation ran for 8 weeks from 4th October 2023 to 28th November 2023. Ahead of the non-statutory consultation engagement was held with host authorities (City of Doncaster Council and North Lincolnshire Council), contact

made to key local stakeholders (MPs, relevant district councillors and host Town/Parish Councils) and technical stakeholders. An introductory meeting with the Planning Inspectorate took place on the 19th December 2022.

4.7.5. Following the non-statutory consultation, the Applicant reviewed all the responses received. All issues raised from the feedback at non-statutory consultation were considered and responded to as part of the Non-Statutory Consultation Report published to accompany the Statutory Consultation (within **Consultation Report Appendices [Document Reference 5.6.1]**). Design changes were made to the Scheme and consulted upon at statutory consultation.

Statutory Consultation

4.7.6. The Applicant undertook statutory consultation with regard to the Scheme in accordance with the requirements of the Planning Act 2008 and the EIA Regulations as follows.

4.7.7. The statutory consultation for the Scheme was held between 20th March 2025- 8th May 2025 to enable the public to review the proposed design of the Scheme and provide feedback.

4.7.8. A PEIR was prepared and published with the statutory consultation. The purpose of the PEIR was to enable the local community and other consultees to understand the likely environmental effects of the Scheme so as to inform their responses to the consultation.

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

4.7.10. Technical consultation responses, and where these have influenced the development and assessment of the Scheme, is detailed in each ES Environmental Aspect Chapter of the ES and the iterative design process is set out in **ES Chapter 3 Site Description, Site Selection and Iterative Design Process [Document Reference 6.1.3].**

Meetings with Statutory Consultees and Stakeholders

4.7.11. A series of meetings have been held with a range of statutory and non-statutory consultees and stakeholders with an interest in the Scheme. Feedback received at these meetings has been considered in the development design. Where relevant, the meetings are referred to in the relevant ES Environmental Aspect Chapters of this ES. These meetings are also reported in the **Consultation Report [Document Reference 5.1]**

## 4.8. References


- Ref. 4-1: HMSO (2017) The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
- Ref. 4-2: 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
- Ref. 4-3: Department for Energy Security and Net Zero (2025) Overarching National Policy Statement for Energy (EN-1)
- Ref. 4-4: Department for Energy Security and Net Zero (2025) National Policy Statement for Renewable Energy Infrastructure (EN-3)
- Ref. 4-5: Department for Energy Security and Net Zero (2025) National Policy Statement for Electricity Networks Infrastructure (EN-5)
- Ref. 4-6: PINS (2025) Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation
- Ref. 4-7: PINS (2025) Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Documents
- Ref. 4-8: PINS (2025) Nationally Significant Infrastructure Projects – Advice Note Nine : Rochdale Envelope
- Ref. 4-9: PINS (2025) Nationally Significant Infrastructure Projects – Advice on Working with Public Bodies in the Infrastructure Planning Process
- Ref. 4-10: PINS (2025) Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment
- Ref. 4-11: IEMA (2015) Environmental Impact Assessment Guide to Shaping Quality Development
- Ref. 4-12: IEMA (2016) Environmental Impact Assessment Guide to: Delivering Quality Development
- Ref. 4-13: IEMA (2022) Health in Environmental Impact Assessment: A Primer for a Proportional Approach

- Ref. 4-14: IEMA (2017) Guide to: Materials and Waste in Environmental Impact Assessment- Guidance for a Proportionate Approach
- Ref. 4-15: IEMA (2020) Guide to: Materials and Waste in Environmental Impact Assessment – Guidance for a Proportionate Approach
- Ref. 4-16: IEMA (2022) Guide: A New Perspective on Land and Soil and Environmental Impact Assessment
- Ref. 4-17: IEMA (2022) Guide: Assessing Greenhouse Gas Emissions and Evaluating Their Significance
- Ref. 4-18: IEMA (2020) Guide: Major Accidents and Disasters in EIA: A Primer
- Ref. 4-19: IEMA (2023) Guide: Environmental Assessment of Traffic and Movement (2023)
- Ref. 4-20: Met Office (2018) UK Climate Projections (UKCP)