



Fosse Green Energy

Preliminary Environmental Information Report

VOLUME

1

**Chapter 5: Environmental Impact
Assessment Methodology and
Consultation**

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5. Environmental Impact Assessment Methodology and Consultation

5.1 Introduction

EIA Process

- 5.1.1 Environmental Impact Assessment (EIA) is the process undertaken to identify and evaluate the likely significant effects of a proposed development on the environment and to identify measures to avoid, reduce, mitigate or manage any significant adverse effects. The EIA should be informed by consultation with statutory consultees, other interested bodies, and members of the public. The purpose of identifying likely significant environmental effects is to ensure decision makers are able to make an informed judgement on the potential environmental impacts of a proposed development.
- 5.1.2 The purpose of a Preliminary Environmental Information (PEI) Report (this report) is to provide the preliminary environmental information obtained and assessed as part of the EIA for a proposed development.
- 5.1.3 Following statutory consultation, the PEI Report will be updated to provide an Environmental Statement (ES), which will accompany the Development Consent Order (DCO) application. It will follow a similar systematic approach to EIA and project design as presented in this PEI Report. The process of identifying likely significant environmental effects is both iterative and cyclical, running in tandem with the iterative design process.
- 5.1.4 The key elements in EIA for a Nationally Significant Infrastructure Project (NSIP) are:
- Iterative project design, taking feedback from consultation and applying it to the development design process on an ongoing basis throughout the EIA process;
 - Scoping and ongoing consultation, including consideration of responses and how these should be addressed as part of the EIA;
 - Technical environmental impact assessments, including baseline studies, input to the design process, and identification of potential significant environmental effects;
 - Consultation on the PEI Report and the subsequent updates to the design and assessments following stakeholders' comments and receipt of new environmental information; and
 - Preparation and submission of the ES. Mitigation is proposed where appropriate to reduce or avoid likely significant adverse effects. Where

practicable, environmental enhancement proposals are incorporated into the design.

- 5.1.5 Each of the technical assessments follows a systematic approach, with the principal steps being:
- Description of baseline conditions;
 - Assessment of likely significant effects arising from the Proposed Development;
 - Identification of appropriate avoidance and mitigation measures, including design changes;
 - Assessment of residual (likely) significant environmental effects that remain following mitigation; and
 - Assessment of effect interactions of the Proposed Development, and potential cumulative effects when considering the Proposed Development along with other planned developments in the area.
- 5.1.6 The assessments provided in this PEI Report are preliminary and the design of the Proposed Development is evolving as assessments continue. The conclusions in this PEI Report will be finalised following statutory consultation, continued environmental impact assessment, and consideration of consultation feedback as the design of the Proposed Development evolves. When the conclusions are finalised the significance of the potential environmental effects identified in this PEI Report may be revised such that potential adverse effects decrease in significance.

General Assessment Approach

- 5.1.7 This PEI Report has been prepared to satisfy the requirements of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as 'the EIA Regulations') (Ref 5-1) as much as practicable at this stage, acknowledging that the assessment is preliminary and will be fully completed for the ES.
- 5.1.8 In preparing this PEI Report, reference has been made to the following guidance:
- Planning Inspectorate Guidance *Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation* (Ref 5-2);
 - Planning Inspectorate Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements (Ref 5-3);
 - Planning Inspectorate Advice Note Nine: Rochdale Envelope (Ref 5-4);
 - Planning Inspectorate Guidance *Nationally Significant Infrastructure Projects: Advice on working with public bodies in the infrastructure planning process* (Ref 5-5); and
 - Planning Inspectorate Guidance *Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment* (Ref 5-6).

EIA Scoping

- 5.1.9 The aim of the EIA scoping process is to identify key expected environmental issues at an early stage, to determine which elements of the Proposed Development are likely to result in significant effects on the environment, and to establish the extent of survey and assessment requirements for the EIA reported in the PEI Report and ES.
- 5.1.10 The issues to be addressed within this PEI Report and the ES were identified in the **EIA Scoping Report, PEI Report Volume 3: Appendix 1-A**, which was submitted to the Planning Inspectorate on 19 June 2023. The Planning Inspectorate reviewed and consulted on the EIA Scoping Report and adopted (on behalf of the Secretary of State) a **Scoping Opinion** on 25 July 2023 (**PEI Report Volume 3, Appendix 1-B**).
- 5.1.11 In response to the Scoping Opinion, this PEI Report (Volume 1), and in due course the ES, includes assessments for the following environmental topics:
- a. **Chapter 6: Climate Change;**
 - b. **Chapter 7: Cultural Heritage;**
 - c. **Chapter 8: Ecology and Nature Conservation;**
 - d. **Chapter 9: Water Environment;**
 - e. **Chapter 10: Landscape and Visual Amenity;**
 - f. **Chapter 11: Noise and Vibration;**
 - g. **Chapter 12: Socio-Economics and Land Use;** and
 - h. **Chapter 13: Traffic and Transport.**
- 5.1.12 The **EIA Scoping Report (PEI Report Volume 3, Appendix 1-A)** concluded that several topics did not require a full chapter within the PEI Report and ES. This approach was accepted by the Planning Inspectorate in the Scoping Opinion. The assessments related to these environmental topics are described in **Chapter 14: Other Environmental Topics** which includes:
- a. Air Quality;
 - b. Glint and Glare;
 - c. Ground Conditions;
 - d. Materials and Waste;
 - e. Major Accidents and Disasters;
 - f. Telecommunications, Television Reception and Utilities; and
 - g. Electric and Electromagnetic Fields.
- 5.1.13 As described in the **EIA Scoping Report (PEI Report Volume 3, Appendix 1-A)** and accepted in the **Scoping Opinion (PEI Report Volume 3, Appendix 1-B)**, potential effects to human health are considered in the PEI Report technical chapters with a standalone assessment scoped out of the

EIA. For clarity, potential effects to human health are set out in the following technical assessments of this PEI Report:

- a. **Chapter 9: Water Environment;**
- b. **Chapter 10: Landscape and Visual Amenity;**
- c. **Chapter 11: Noise and Vibration;**
- d. **Chapter 13: Traffic and Transport;** and
- e. **Chapter 14: Other Environmental Topics Section 14.2: Air Quality.**

5.1.14 Paragraph 4 within Schedule 4 of the EIA Regulations (Ref 5-1) states that the ES should include “a description of the factors [...] likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape”. These factors are addressed within the relevant chapters listed above.

PEI Report

5.1.15 This PEI Report summarises the outcomes to date of the following ongoing EIA activities:

- a. Establishing baseline (including future baseline) conditions;
- b. Consultation with statutory and non-statutory consultees;
- c. Consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to the EIA;
- d. Consideration of technical standards for the development of significance criteria and specialist assessment methodologies;
- e. Design evolution and review;
- f. Review of secondary information, previous environmental studies, publicly available information and databases;
- g. Physical surveys and monitoring;
- h. Desk-top studies;
- i. Modelling and calculations; and
- j. Reference to current guidance.

5.1.16 Each technical chapter (**Chapter 6 to 13**) follows the same structure for ease of reference, as outlined below:

- a. Introduction;
- b. Legislation and Planning Policy;
- c. Consultation;

- d. Assessment Methodology;
- e. Baseline Conditions;
- f. Embedded Mitigation Measures;
- g. Preliminary Assessment of Effects;
- h. Additional Mitigation and Enhancement;
- i. Residual Effects and Conclusions;
- j. Cumulative Assessment; and
- k. References.

5.1.17 **Chapter 14: Other Environmental Topics** is presented in a different format, however within each technical section details of the above are provided as relevant.

5.2 Rochdale Envelope

- 5.2.1 As discussed in **Chapter 3: The Proposed Development, PEI Report Volume 1**, several technical parameters have yet to be finalised for the Proposed Development. This is important as the technology for solar photovoltaic (PV) and Battery Energy Storage Systems (BESS) continues to evolve, and to maintain commercial flexibility to meet the changing demands of the UK market, prior to construction. The 'Rochdale Envelope' approach has therefore been applied within the EIA to ensure a robust assessment of the likely significant environmental effects of the Proposed Development, in accordance with the Planning Inspectorate's Advice Note Nine: The Rochdale Envelope (Ref 5-4).
- 5.2.2 Additionally, paragraph 4.3.18 of the Overarching National Policy Statement (NPS) for Energy EN-1 (2023) (Ref 5-7) provides that *"the Secretary of State should consider the worst case impacts in its consideration of the application and consent, providing some flexibility in the consent to account for uncertainties in specific project details"*.
- 5.2.3 Therefore, as is relevant for each technical discipline, the maximum (and where relevant, minimum) parameters for the elements where flexibility needs to be retained have been assessed under the Rochdale Envelope approach. The approach also recognises that the worst-case parameter for one technical assessment may differ from another, ensuring that worst case overall impacts are predicted. Each of the technical assessments (**Chapters 6 to 14**) of this PEI Report describe the parameters applied in relation to the particular discipline. As the Proposed Development design evolves, key elements of the design may be fixed. However, flexibility will need to be maintained for some aspects of the Proposed Development for the DCO application. Where flexibility is to be retained in the DCO application, any changes to design parameters after consent will remain within the likely worst-case envelope assessed in this PEI Report and subsequently the ES.

5.3 Spatial Scope

- 5.3.1 The technical chapters of this PEI Report (**Chapters 6 to 14**) describe the spatial scope, including the rationale for determining the specific area within which the assessment is focussed (the 'study area'). The study areas are a function of the nature of the potential impacts and the locations of potentially affected environmental resources or receptors. Justification for the spatial scope of the study area considered appropriate is documented in each technical chapter (**Chapters 6 to 14**).

Transboundary Effects

- 5.3.2 Schedule 4, Part 5 of the EIA Regulations requires a description of likely significant transboundary effects on any other European Economic Area (EEA) State to be provided. Guidance for the consideration of transboundary effects is provided in the Planning Inspectorate's Guidance *Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process* (Ref 5-8).
- 5.3.3 At Scoping stage, a Transboundary Effects Screening Matrix was produced, which assessed the likelihood of transboundary effects. The original assessment is provided in Appendix A of **Appendix 1-A: Scoping Report, PEI Report Volume 3**. The assessment at Scoping stage concluded that the Proposed Development is not likely to have significant effects beyond the jurisdiction of the United Kingdom. Within the **Scoping Opinion (PEI Report Volume 3, Appendix 1-B)** the Planning Inspectorate confirmed that *"the likelihood of transboundary effects resulting from the Proposed Development is so low that it does not warrant the issue of a detailed transboundary screening."*
- 5.3.4 Since the Scoping stage, the design of the Proposed Development has been refined in line with the description provided in **Chapter 4: Alternatives and Design Evolution, PEI Report Volume 1**. Other than the size of the Proposed Development, which has been reduced, the characteristics and potential impacts of the Proposed Development have not changed from those previously assessed at Scoping stage. Therefore, transboundary effects have not been considered further in this PEI Report.

5.4 Determining the Baseline Conditions

- 5.4.1 In order to predict the potential environmental effects of the Proposed Development, it will be necessary to determine the environmental conditions that currently exist within the Site and surrounding area, in the absence of the Proposed Development. These are known as the 'baseline conditions'.
- 5.4.2 Detailed environmental baseline information has been collected and the methodology for the collection process has been detailed within the PEI Report technical chapters. However, it is noted that a number of baseline surveys are ongoing (for example, some seasonal ecology surveys) and will be completed for the ES. Additional baseline surveys may be carried out for

the ES stage if necessary to support the assessment. The baseline information is being gathered from various sources, including:

- a. Online/digital resources;
- b. Data searches, for example GroundSure, Historic Environment Record, Lincolnshire Environmental Records Centre;
- c. Baseline site surveys; and
- d. Environmental information submitted in support of other planning applications for developments in the vicinity of the Proposed Development.

5.4.3 Where required, consideration will also be given to how the baseline conditions would evolve in the absence of the Proposed Development, known as the 'future baseline', in respect of both natural changes and any planned developments.

5.5 Development Design, Impact Avoidance and Mitigation

5.5.1 Regulation 14, paragraph (2)(c) of the EIA Regulations (Ref 5-1) requires the ES to provide "*a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment*". These are commonly referred to as mitigation measures.

5.5.2 The Proposed Development will adopt a standard hierarchical approach to identifying mitigation requirements:

- a. **Avoid or Prevent:** In the first instance, mitigation will seek to avoid or prevent the adverse effect at source, for example by routing the Grid Connection Route or siting solar PV panels away from sensitive receptors.
- b. **Reduce:** If the effect is unavoidable, mitigation measures will be implemented which seek to reduce the significance of the effect. For example, the use of a noise barriers to reduce construction noise at nearby noise sensitive receptors; and
- c. **Offset:** If the effect can neither be avoided nor reduced, mitigation will seek to offset the effect through the implementation of compensatory mitigation, for example habitat creation to replace any habitat losses.

5.5.3 Mitigation measures fall into two categories:

- a. 'Embedded mitigation measures' (also referred to sometimes as 'in-built mitigation measures'), which are built into the design of the Proposed Development; and
- b. 'Additional mitigation measures', which are implemented alongside project design commitments to address an identified likely significant environmental effect.

- 5.5.4 The design process for the Proposed Development has been informed by the findings of early environmental appraisals and the EIA process. The Proposed Development has had several measures incorporated into the design to avoid or minimise environmental impacts, for example through the appropriate routeing and siting of infrastructure. The key aspects where the design has evolved are described in **Chapter 4: Alternatives and Design Evolution, PEI Report Volume 1**. These elements of the design evolution include measures needed for legal compliance, as well as measures that implement the requirements of good practice guidance documents.
- 5.5.5 Once these measures are incorporated into the design, they are termed 'embedded measures'. Embedded measures relevant to the construction phase will be described within each technical PEI Report or ES chapter. For the operational phase, such embedded measures will be represented primarily in the design, and will also be described in the technical chapter where required/relevant. Embedded measures are therefore either incorporated into the design from the outset or identified through the assessment process.
- 5.5.6 The preliminary assessment presented in the PEI Report has been undertaken on the basis that these measures are incorporated in the design and construction practices. Embedded mitigation measures for the construction phase are set out in **PEI Report Volume 1, Appendix 3-A: Framework Construction Environmental Management Plan (CEMP)** (which will be submitted with the DCO application), including, but not limited to, measures such as construction and exclusion zones in relation to retained vegetation, ensuring a tidy and neat working area, and the sustainable management and handling of soil resources in accordance with best practice measures. The Framework CEMP will be developed into a detailed (or construction issue) CEMP by the appointed Contractor prior to the start of construction and will provide the framework within which the appointed Contractor (including any sub-contractors or suppliers involved in the works) will plan, implement and deliver environmental management, mitigation and monitoring requirements during the construction phase of the Proposed Development. The detailed CEMP will be agreed with the local planning authorities following grant of the DCO and prior to the start of construction. Production of the detailed CEMP will be secured through a Requirement attached to the DCO.
- 5.5.7 It is intended that the detailed CEMP will be a 'live' document and will be updated to reflect changes such as new legislation being issued or additional information becoming available.
- 5.5.8 Implementation of embedded mitigation relied upon in the assessment will be secured in the DCO, either through the setting of limits of deviation (e.g., development extents or specific maximum heights) or specifying mitigation measures via a Requirement attached to the DCO.
- 5.5.9 Where likely significant effects are identified as part of the assessment, consideration has been given to any 'additional mitigation' over and above the embedded mitigation that may be required to mitigate any significant

adverse effects. These additional measures are presented within each of the technical chapters, where required, and may include measures beyond industry standard controls such as bespoke / site specific measures like temporary fencing to prevent glint and glare until the vegetation planting has properly established. These measures will also be discussed within the relevant framework environmental management plan(s). The residual effects (after the implementation of mitigation) have then been assessed and are presented in each topic. Likely significant residual effects are also summarised in **Chapter 16: Summary of Environmental Effects, PEI Report Volume 1**.

- 5.5.10 In accordance with the recently published Planning Inspectorate's Guidance *Nationally Significant Infrastructure Projects: Commitments Register* (Ref 5-13), the DCO application will include a commitments register listing the embedded and additional mitigation measures for the Proposed Development.

5.6 Temporal Scope: Timescales and Assessment Years

Construction Phase Effects

- 5.6.1 For the purposes of the assessment, the construction phase effects are those effects that result from activities during enabling works, construction, and commissioning activities. This covers sources of 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 the establishment of construction compounds are likely to be relatively short in duration in respect of the whole construction period, whereas the construction of energy infrastructure and landscaping activities are likely to persist throughout the entire construction period. By their nature, most construction impacts will be temporary and reversible.

Operational Phase Effects

- 5.6.2 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 solar PV infrastructure, and its operation, use and maintenance. Timescales associated with these enduring effects fall into the following categories (unless otherwise specified within a technical chapter):
- Short term – endures for up to 12 months after construction or decommissioning;
 - Medium term – endures for one to five years after construction or decommissioning;

- c. Long term – endures for more than five years after construction or decommissioning;
 - d. Reversible long-term effects – long-term effects, which endure throughout the lifetime of the Proposed Development, but which cease once the Proposed Development has been decommissioned (in relation to the Proposed Development, operational effects will all fall into this category); and
 - e. Permanent effects – effects which cannot be reversed following decommissioning (e.g., should the intention be to leave habitat planting in place after the project end).
- 5.6.3 Environmental management and mitigation measures for the operational phase of the Proposed Development will be planned, implemented, and delivered through an Operational Environmental Management Plan (OEMP) to be prepared following grant of the DCO and secured via a Requirement attached to the DCO. A Framework OEMP will be presented with the DCO application.

Decommissioning Period Effects

- 5.6.4 The design life of the Proposed Development is expected to be 60 years. The assessments presented in this PEI Report (and in the ES) therefore assume a design / operational life of 60 years.
- 5.6.5 For the assessment, the decommissioning period effects will be taken to be those for which the source begins and ends during the decommissioning stage, and the effects do not endure beyond the completion of the decommissioning phase. For example, this covers sources of effects such as decommissioning 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 slightly less intensity. As with construction phase effects, some aspects of decommissioning will endure for longer than others.

Assessment Years

- 5.6.6 The assessment considers the environmental impacts of the Proposed Development at key stages in its construction and operation and, as far as practicable, its decommissioning.
- 5.6.7 The 'existing baseline' date is 2023/2024, since this is the period in which the baseline studies for the EIA have been undertaken. As described in paragraph 5.4.3, 'future baseline' conditions are also predicted for each assessment, whereby the conditions anticipated to prevail at a certain point in the future (assuming the Proposed Development does not progress) are identified for comparison with the predicted conditions with the Proposed Development. This can include the introduction of new receptors and

resources into an area, or new development schemes that have the potential to change the baseline.

5.6.8 The assessment scenarios that are being considered for the purposes of the EIA (and considered in this PEI Report) are as follows:

- a. Existing Baseline (2023/2024) – this is the principal baseline against which environmental effects will be assessed;
- b. Future Baseline (in the absence of the Proposed Development) in 2031–2033, which are the expected construction years. A future baseline scenario in 2048 is also included for landscape, visual and heritage setting only, reflecting Year 15 (post construction), in accordance with industry good practice. Where relevant and possible, consideration will also be given to a future baseline approximately 60 years after commencement of operation (2093) to assess decommissioning impacts against.
- c. Construction (2031–2033) – the peak construction year for the purpose of the EIA is anticipated to be 2032; this assumes commencement of construction in 2031 and that the Proposed Development is built out rapidly over a 24-month period (with construction of the Grid Connection Route requiring approximately 12-months and commencing in year one). This is a likely worst case from a traffic generation point of view because it compresses the trip numbers into a shorter duration and represents the greatest impact on the highway network. A lengthened construction phase would likely result in lower traffic, air quality and noise impacts; therefore, the likely worst-case scenario has been assessed within the PEI Report. Where it is not the worst case, this is discussed in the relevant technical chapter to ensure that an actual or worst-case effect has been determined. The peak construction assessment year will be reviewed as the anticipated construction programme is considered in more detail during design development. A full justification for the reasonable worst-case scenario that is assessed will be provided in the ES.
- d. Operation (2033) – this is the expected first year of exporting electricity by the Proposed Development. However, due to the sequential nature of construction activities it is possible that some solar PV panels may be generating and exporting energy whilst others are still being built. Any impacts associated with overlap of phases will be fully assessed in the ES.
- e. Decommissioning (after 60 years from commercial operation date, approximately 2093) – this would be the earliest year when decommissioning would commence based on the anticipated 60-year design life of the Proposed Development.

5.7 Effect Significance Criteria

5.7.1 The evaluation of the significance of an effect is important as it is the significance that determines the resources that should be deployed in

avoiding or mitigating a significant adverse effect, or conversely, the actual value of a beneficial effect. The overall environmental acceptability of the Proposed Development is a matter for the Secretary of State to determine, having taken into account, amongst other matters, the environmental information that is to be set out in the ES, including all likely beneficial and adverse environmental effects. Within this PEI Report, where it has not been possible to quantify effects, qualitative assessments have been undertaken, based on available knowledge and professional judgment. Where uncertainty exists, this is noted in the relevant technical chapter and valid assumptions made / a worst case approach taken as appropriate.

- 5.7.2 The significance of residual environmental effects has been determined by reference to criteria for each assessment topic. Specific effect significance criteria for each technical discipline have been developed and agreed with the Planning Inspectorate through the EIA Scoping process, giving due regard to the following:
- Extent and magnitude of the impact (i.e. the magnitude of change from the baseline condition) (described as high, medium, low and very low);
 - Effect duration (see paragraph 5.6.2), and whether effects are temporary, reversible or permanent;
 - Effect nature (whether direct or indirect, reversible or irreversible, beneficial or adverse);
 - Whether the effect occurs in isolation, is cumulative or interacts with other effects;
 - Performance against any relevant environmental quality standards;
 - Sensitivity of the receptor (described as high, medium, low and very low); and
 - Compatibility with environmental policies.
- 5.7.3 The significance of residual environmental effects has been evaluated with reference to available definitive standards, accepted criteria, and legislation, where applicable. For issues where definitive quality standards do not exist, significance is based on the:
- Local, district, regional or national scale or value of the resource affected;
 - Number of receptors affected;
 - Sensitivity of these receptors; and
 - Duration of the effect.
- 5.7.4 In order to provide a consistent approach to expressing the outcomes of the various studies undertaken as part of the EIA, and thereby enable comparison between effects upon different environmental topics, the following terminology is used in the PEI Report to define residual environmental effects:

- a. Adverse – detrimental or negative effects to an environmental / socio-economic resource or receptor;
- b. No effect – where there would be no effects upon the environmental / socio-economic resource or receptor; or
- c. Beneficial – advantageous or positive effects to an environmental / socio-economic resource or receptor.

5.7.5 Where adverse or beneficial effects are identified, these have been assessed against the following scale:

- a. **Negligible** – effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, and are of no significant consequence;
- b. **Minor** – slight, very short or highly localised effect of no significant consequence;
- c. **Moderate** – noticeable effect (by extent, duration or magnitude) which may be considered significant; or
- d. **Major** – considerable effect (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards; considered significant.

5.7.6 Each of the technical chapters of this PEI Report (**Chapters 6 to 14**) provides the criteria, including sources and justifications, for quantifying the different categories of effect. Where possible, this is based upon quantitative and accepted criteria (for example, noise assessment guidelines), together with the use of value judgment and expert interpretation to establish to what extent an effect is environmentally significant.

5.7.7 **Table 5-1** illustrates an example of the classification of effects matrix.

Table 5-1: Example Matrix to Classify the Significance of Environmental Effects

Sensitivity or value of resource/receptor	Magnitude of impact			
	High	Medium	Low	Very Low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

5.7.8 Following the classification of an effect, clear statements are made within the technical chapters (**Chapters 6 to 14**) of this PEI Report as to whether an effect is considered to be significant or not significant. As a rule, major and moderate effects are considered to be significant (as shown by the shaded cells in **Table 5-1** above), whilst minor and negligible effects are considered to be not significant. However, professional judgement has been applied, including taking account of whether the effect is permanent or temporary, its duration and frequency, whether it is reversible, and / or its likelihood of

occurrence as described in paragraph 5.7.5. Generic definitions for the classification of effects are shown in **Table 5-2**.

Table 5-2: Generic Effects Descriptions

Effect	Generic Description
Major	These effects may represent key factors in the decision-making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features which are unique and which, if lost, cannot be replaced or relocated.
Moderate	These effects, are likely to be important at a local scale and on their own could have an important and relevant influence on decision making.
Minor	These effects may be raised as local issues and may be of relevance in the detailed design of the Proposed Development but are unlikely to be critical in the decision-making process.
Negligible	Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error. These effects are unlikely to influence decision making, irrespective of other effects.

- 5.7.9 Where mitigation measures are identified to avoid or reduce adverse impacts, these have either been incorporated into the design of the Proposed Development, translated into construction commitments, or included as operational or managerial standards / procedures. The technical chapters (**Chapters 6 to 14**) in this PEI Report present any 'residual' environmental effects, which are the environmental effects which remain following the implementation of embedded and additional mitigation measures and classify these in accordance with the effect classification terminology given above.
- 5.7.10 It should be noted that some technical disciplines utilise different criteria when undertaking assessments due to differences in industry accepted guidelines and specifications. Where this is the case, the technical topic chapter provides the assessment methodology and provide justification for deviating from the general EIA methodology as described in this Section.

Assessment of Construction and Decommissioning Effects

- 5.7.11 The assessment of construction and decommissioning effects has been undertaken based on existing knowledge, techniques, and equipment. A 'reasonable worst-case' scenario has been used with respect to the envisaged construction methods, location (proximity to sensitive receptors), phasing and timing of construction activities. Typically, decommissioning phase effects are similar in nature to the construction phase, although may be of shorter duration and of slightly less intensity.
- 5.7.12 The assessment of construction and decommissioning effects assumes the implementation of standard good practice measures, for example the use of

dust suppression measures on haul roads and using containers with 110% capacity to store fuel and other chemicals onsite. The purpose of this is to focus on the Proposed Development-specific effects, rather than generic construction effects that can be easily addressed using generic good practice mitigation measures which the Applicant has committed to. Construction and decommissioning assumptions, including what has been assumed in terms of good practice measures, are set out within the technical chapters (**Chapters 6 to 14**) of this PEI Report, and the **Framework CEMP (PEI Report Volume 3, Appendix 3-A)**. Each technical chapter of the PEI Report identifies and assesses construction and decommissioning effects that are likely to remain after these mitigation measures are in place.

5.8 Interaction and Accumulation

- 5.8.1 In accordance with the Schedule 4, paragraph 5 of the EIA Regulations (Ref 5-1) 'cumulative effects' have been considered within this PEI Report. By definition, these are effects that result from incremental changes caused by other past, present or reasonably foreseeable actions cumulatively with the Proposed Development.
- 5.8.2 For the cumulative impact assessment to be presented in the ES, two types of impact will be considered:
 - a. The combined effect of individual impacts from the Proposed Development, for example where a single receptor is affected by noise and traffic disruption during the construction of the Proposed Development (these will be referred to as 'effect interactions'); and
 - b. The combined effects of other development scheme(s) which may interact cumulatively with the Proposed Development. The effects of these schemes may, on an individual basis be insignificant but, cumulatively with the Proposed Development, have a new or different likely significant effect on the environment (these are referred to as 'cumulative effects').
- 5.8.3 The assessment will be based on the best available data from other proposed and committed development(s) and associated information which is currently in the public domain or has been provided to the Proposed Development. The assessment will assume that publicly available information is accurate; the assessment is also reliant on collaboration with a range of statutory consultees, neighbouring authorities, and other developers to identify changes in information which may be pertinent to the assessment.
- 5.8.4 Where there are specific limitations associated with data, these will be highlighted as the assessment progresses.
- 5.8.5 The Cumulative Effects and Interactions chapter of the ES will be accompanied by a figure illustrating the location of other developments (cumulative projects) in the local area that have the potential to increase the environmental impacts associated with the Proposed Development. A preliminary list of cumulative schemes has been discussed with the North Kesteven District Council and Lincolnshire County Council and will be

checked following statutory consultation and prior to commencement of the Environmental Statement. **Chapter 15: Cumulative Effects and Interactions, PEI Report Volume 1** presents a list of relevant cumulative developments.

- 5.8.6 The technical chapters of the PEI Report (**Chapters 6 to 14, PEI Report Volume 1**) contain a preliminary assessment of cumulative effects, which will be developed and expanded on for the ES.

Effect Interactions

- 5.8.7 A range of public sector and industry-led guidance is available on the approach to assessing and quantifying effect interactions that lead to combined effects on sensitive receptors, but at present there is no single, agreed industry standard method. The European Commission (EC) has produced guidelines for assessing effect interactions “which are not intended to be formal or prescriptive, but are designed to assist EIA practitioners in developing an approach which is appropriate to a project...” (Ref 5-9).
- 5.8.8 AECOM has reviewed these guidelines and has developed an approach based upon professional judgement which uses the defined residual environmental effects of the Proposed Development to determine the potential for effect interactions that lead to combined effects. This approach was followed on previous NSIPs such as Sunnica Energy Farm, Gate Burton Energy Park, and Longfield Solar Farm, which are all solar NSIPs and have been granted development consent.
- 5.8.9 Several effects on one receptor or receptor group could theoretically interact or combine to produce a combined significant overall effect.
- 5.8.10 A preliminary exercise which tabulates the potential for individual environmental effect to combine to create a new environmental effect on a resource, receptor, or receptor group has been undertaken to determine the potential for effect interactions and therefore any combined effects, as presented in **Chapter 15: Cumulative Effects and Interactions, PEI Report Volume 1**. It should be noted that the preliminary exercise identifies where these effect interactions (‘combined effects’) are inherently considered within the assessments presented within **Chapters 6 to 14, PEI Report Volume 1**, and where they are not. Therefore, the focus of the preliminary exercise presented in **Chapter 15: Cumulative Effects and Interactions, PEI Report Volume 1** is on those interactions that are not assessed elsewhere in the PEI Report and provides an appraisal of the likelihood of any significant combined effects.
- 5.8.11 Only adverse or beneficial residual effects classified as minor, moderate, or major have been considered in relation to potential combined effects. Residual environmental effects classified as negligible have been excluded from the assessment of effect interactions as, by virtue of their definition (see **Table 5-2**), they are considered to be imperceptible effects to an environmental / socio-economic resource or receptor.

Cumulative Effects with Other Developments

- 5.8.12 The Planning Inspectorate's Guidance *Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment* (Ref 5-6) on the assessment of cumulative effects identifies a four-stage approach. Adopting that approach, as appropriate, the Applicant's methodology for the assessment of cumulative effects is as follows.

Stage 1 – Establish the NSIP's Zone of Influence and Identify Long List of 'Other Development'

- 5.8.13 A review of other developments has been undertaken, initially encompassing a 'zone of influence' (Zol) defined by the environmental topic specialists to prepare a preliminary long list of 'other development'. The justification for each Zol identified is presented in **PEI Report Volume 1, Chapters 6 to 14** and summarised in Table 15-4 of **PEI Report Volume 1, Chapter 15: Cumulative Effects and Interactions**.
- 5.8.14 Developments included in the initial long-list were identified using the criteria below. The criteria have been developed having regard to the Planning Inspectorate's Guidance *Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment* (Ref 5-6) and utilising experience of assessing cumulative effects for schemes of a similar nature and scale to the Proposed Development:
- Development currently under construction, approved applications which have not yet been implemented (covering the past five years and taking account of those that received planning consent over three years ago and are still valid but have not yet been implemented), or developments that have been registered with the council or relevant determining authority, and which meet one of the below criteria (b) to (e);
 - Listed on the National Infrastructure Planning Programme of Projects within 10km of the Site Boundary;
 - Applications for EIA development within 5km of the Site Boundary;
 - Other, non-EIA applications for ground based solar and/or BESS development within 5km of the Site Boundary; and
 - Other schemes that do not meet the above criteria but which the Applicant wishes to include or a statutory stakeholder specifically requests is included. This may include development allocations identified in the relevant Development Plan (and emerging Development Plans) for example, which are aspirational but have not yet reached pre-application or application stage.

Stage 2 – Identify Short List of 'Other Development' for Cumulative Effects Assessment

- 5.8.15 At Stage 2, to ensure a proportionate approach to the assessment, any developments of a nature or scale without the potential to result in likely significant cumulative effects were excluded from the list, following consideration of:

- a. The likely Zol for each environmental topic;
 - b. The nature of the development; and
 - c. Whether there is likely to be overlap in the timing of the construction or operational phases.
- 5.8.16 The preliminary short list of cumulative developments is provided at **PEI Report Volume 1, Chapter 15: Cumulative Effects and Interactions**.
- 5.8.17 A preliminary short list of cumulative developments has been shared with the host Local Planning Authorities and comments received. The short list will continue to be developed in liaison with the host councils (the North Kesteven District Council and Lincolnshire County Council) after statutory consultation.

Stage 3 – Information Gathering

- 5.8.18 To inform the assessment, information relating to the other development(s) will be collected from appropriate sources (which may include the Local Planning Authorities, the Planning Inspectorate or directly from the applicant / developer) and will include, but not be limited to:
- a. Proposed design and location information;
 - b. Proposed programme of demolition, construction, operation and/or decommissioning; and
 - c. Environmental assessments that set out baseline data and effects arising from 'other developments'.

Stage 4 – Assessment (to be provided within the ES)

- 5.8.19 A preliminary assessment of cumulative effects is available at this PEI Report stage and will be updated for the ES. **PEI Report Volume 1: Chapters 6 to 14** include preliminary consideration of cumulative effects based on the information currently available.
- 5.8.20 The assessment to be presented in the ES will include a list of those other developments considered to have the potential to generate a significant cumulative effect together with the Proposed Development, and this will potentially be documented in a matrix, in line with Matrix 2 (Appendix 2) of the Planning Inspectorate's Guidance *Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment* (Ref 5-6) which includes the following:
- a. A brief description of the development;
 - b. An assessment of the cumulative effect with the Proposed Development;
 - c. Proposed mitigation applicable to the Proposed Development; and
 - d. The likely residual cumulative effect.
- 5.8.21 The criteria for determining the significance of any cumulative effect will be based upon:
- a. The duration of effect, i.e. will it be temporary or permanent;

- b. The extent of effect, e.g. the geographical area of an effect;
- c. The type of effect, e.g. whether additive or synergistic;
- d. The frequency of the effect;
- e. The 'value' and resilience of the receptor affected; and
- f. The likely success of mitigation.

5.9 Consultation

Introduction

- 5.9.1 Consultation is integral to the preparation of DCO applications and to the EIA process. The views of consultation bodies and the local community serve to focus the environmental assessments and to identify specific issues that require further investigation, as well as to inform aspects of the design of the Proposed Development. Consultation is an ongoing process, which enables mitigation measures to be identified and, where appropriate, incorporated into the project design thereby limiting adverse effects. Consultation also provides a platform for exploring and, where possible, incorporating environmental enhancements and benefits. The publication of this PEI Report forms an important part of the consultation process on the proposed DCO application.

DCO Consultation Requirements

- 5.9.2 The DCO process sets out several statutory requirements regarding consultation. The Planning Act 2008 (Ref 5-10) requires applicants for DCOs to carry out formal (statutory) pre-application consultation on their proposals with certain stakeholder groups and the community. Further requirements set out how the Proposed Development must be publicised, and specific documents produced, including a Statement of Community Consultation (SoCC), PEI Report, and a Consultation Report. The latter will be produced and submitted along with the DCO application.
- 5.9.3 There are several requirements as to how this consultation must be undertaken that are set out in the Planning Act 2008 (Ref 5-10) and related regulations, which this PEI Report and the ES will adhere with.

Consultation to Date

- 5.9.4 Details of all consultation undertaken with respect to the Proposed Development will be provided in the Consultation Report which will form part of the DCO application.
- 5.9.5 Details of the correspondence and meetings held with technical stakeholders to date, for example to discuss and agree assessment methodologies, are contained in the relevant technical chapters of this PEI Report (**Chapters 6 to 14, PEI Report Volume 1**).

- 5.9.6 A number of meetings with statutory consultees have already taken place to provide an introduction to the proposals, including with:
- a. The Witham and Brant Parish Cluster;
 - b. Lincolnshire County Council;
 - c. North Kesteven District Council;
 - d. Environment Agency; and
 - e. Historic England.
- 5.9.7 In addition, a project website has been set up to provide up to date information on the project: www.fossegreenenergy.co.uk and information about consultation events and methods of communication has been provided by direct mail to all addresses within a defined consultation zone.
- 5.9.8 Engagement with stakeholders is an ongoing process and will continue during the statutory consultation and throughout the DCO process.

Scoping Consultation

- 5.9.9 The EIA Scoping Report was submitted to the Planning Inspectorate on 19 June 2023. The Planning Inspectorate reviewed and consulted on the **EIA Scoping Report (PEI Report Volume 3: Appendix 1-A)** and adopted a **Scoping Opinion** (on behalf of the Secretary of State (SoS)) on 25 July 2023 (the Scoping Opinion) which included the formal responses received by the Planning Inspectorate from consultees (**PEI Report Volume 3: Appendix 1-B**). Following the adoption of the Scoping Opinion, consultation has been undertaken with relevant statutory consultees in the preparation of this PEI Report, and will continue as part of the preparation of the ES (including where recommended by the Scoping Opinion). Scoping Opinion responses have been reviewed and comments provided in **PEI Report Volume 3: Appendix 1-C** on how the comments have been addressed in the PEI Report, or how they will be addressed in preparation of the ES.
- 5.9.10 The pre-application consultation undertaken by the Applicant will also be documented within the Consultation Report that will form part of the DCO application. This will include a separate section on EIA-related consultation as recommended within the Planning Inspectorate Guidance *Nationally Significant Infrastructure Projects: Advice on the Consultation Report* (Ref 5-11).

Non-statutory Consultation

- 5.9.11 The Applicant held an initial round of non-statutory public consultation on its proposals between 11 September and 20 October 2023. Through the non-statutory consultation, feedback was sought on early proposals for the Proposed Development, the approach to EIA, and the Applicant's approach to consultation.

5.9.12 Responses were received from a range of consultees and stakeholder groups, including:

- a. Local communities;
- b. Elected representatives (including MPs, ward councillors and parish councillors);
- c. Landowners; and
- d. Special and local interest groups.

5.9.13 Key themes raised in responses to the consultation included:

- a. Impact on local wildlife and biodiversity;
- b. The choice / location of site;
- c. Use of arable farmland and food production security;
- d. Interest in how local community would benefit;
- e. Questions about the proximity of solar PV panels to homes;
- f. Potential for contamination and hazardous waste from solar PV panels;
- g. Safety and fire hazards from battery and energy storage systems;
- h. Impact of the project on local house prices;
- i. Length of construction period and scale of construction;
- j. Impacts of the site on the flood risk to the area;
- k. National Grid's Navenby substation location and the substation planning process;
- l. Health concerns associated with solar PV panels;
- m. The number of solar developments proposed in Lincolnshire;
- n. Access to Public Rights of Way and permissive paths;
- o. Preferences expressed toward alternative developments, for instance rooftop solar and offshore wind; and
- p. Noise disruption and visibility impacts to the views of the countryside.

5.9.14 Comments from the non-statutory consultation have influenced the ongoing evolution of the Proposed Development design and details will be set out in the Consultation Report. The iterative process of designing the Proposed Development is set out in detail in **PEI Report Volume 1, Chapter 4: Alternatives and Design Evolution**.

Statutory Consultation

5.9.15 In accordance with Section 47(1) of the Planning Act 2008 (Ref 5-10) this PEI Report is being consulted upon as part of the statutory consultation. As part of this statutory consultation, members of the public are invited to comment on the Proposed Development, including its likely significant environmental impacts and proposed mitigation measures as presented

within this PEI Report. This feedback will be taken into account when finalising the Proposed Development proposals and the ES for the DCO application.

- 5.9.16 In addition to consultation with the local community, consultation is also being undertaken with prescribed consultation bodies as well as affected landowners, in accordance with Sections 42 and 48 of the Planning Act 2008 (Ref 5-10) and Regulation 13 of the EIA Regulations (Ref 5-12).
- 5.9.17 All responses received during consultation will be carefully considered and the Applicant will have due regard to them in the development of the Proposed Development in accordance with Section 49 of the Planning Act 2008 (Ref 5-10). Details of any responses received during consultation and the regard taken of those responses will be included in the Consultation Report, which will be submitted as part of the DCO application.
- 5.9.18 The Consultation Report will demonstrate how the Applicant has complied with the consultation requirements of the Planning Act 2008 (Ref 5-10) and EIA Regulations (Ref 5-12) and will be considered by the SoS when determining whether to accept the DCO application, and then in examining the DCO application.

5.10 References

- Ref 5-1 The Infrastructure Planning (Environmental Impact Assessment) Regulations (2017). Available at:
<https://www.legislation.gov.uk/uksi/2017/572>
- Ref 5-2 Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation.
- Ref 5-3 Planning Inspectorate (2020). Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements (version 7).
- Ref 5-4 Planning Inspectorate (2018). Advice Note Nine: Rochdale Envelope (version 3).
- Ref 5-5 Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on working with public bodies in the infrastructure planning process.
- Ref 5-6 Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment.
- Ref 5-7 Department for Energy Security & Net Zero (2023). Overarching National Policy Statement for Energy (EN-1).
- Ref 5-8 Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on Transboundary Impacts and Process.
- Ref 5-9 European Commission (1999). Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.
- Ref 5-10 The Planning Act 2008. Available at:
<https://www.legislation.gov.uk/ukpga/2008/29>.
- Ref 5-11 Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Advice on the Consultation Report.
- Ref 5-12 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended by The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018). Available at:
http://www.legislation.gov.uk/uksi/2017/572/pdfs/uksi_20170572_en.pdf
and
http://www.legislation.gov.uk/uksi/2018/695/pdfs/uksi_20180695_en.pdf
- Ref 5-13 Planning Inspectorate (2024). Nationally Significant Infrastructure Projects: Commitments Register. Available at:
<https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-commitments-register>