

Byers Gill Solar  
EN010139

# 6.2.4 Environmental Statement

## Chapter 4 Approach to EIA

Planning Act 2008

APFP Regulation 5(2)(a)

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

Volume 6

February 2024

Revision C01



# Table of Contents

Page

<b>4.</b>	<b>Approach to EIA</b>	<b>1</b>
4.1.	Introduction	1
4.2.	EIA Process	2
4.3.	Baseline conditions	6
4.4.	Assessment of effects	8
4.5.	Mitigation	11
4.6.	Monitoring	13
4.7.	Other supporting assessments and documents	14
4.8.	Cumulative effects	16
	<b>References</b>	<b>18</b>

## Table of Tables

Table 4-1	Summary of the scope of the EIA	3
Table 4-2	Baseline scenarios	8
Table 4-3	Indicative environmental sensitivity of a receptor	9
Table 4-4	Indicative magnitude of impact	9
Table 4-5	Matrix to classify environmental effects	10
Table 4-6	Indicative significant criteria for use within the EIA	10

## Appendices

Appendix 4.1	EIA Scoping Report
Appendix 4.2	EIA Scoping Opinion
Appendix 4.3	Scoping Opinion Response Matrix

## 4. Approach to EIA

### 4.1. Introduction

- 4.1.1. This chapter of the Environmental Statement (ES) provides an overview of the approach to the Environmental Impact Assessment (EIA), including the approach to the EIA assessment scenarios and general methodology used to provide consistency across assessment topics.
- 4.1.2. An EIA is a staged, iterative process, the final findings of which are reported in an ES submitted in support of the application for a Development Consent Order (DCO). This ES reports the findings of an assessment of the likely significant effects of Byers Gill Solar (the Proposed Development) and has been undertaken in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) and relevant guidance.
- 4.1.3. This chapter outlines the approach to the EIA as follows:
- EIA process – sets out the overall legislative requirements and guidance to inform the EIA process, including the treatment of uncertainty and limitations of the assessment;
  - Baseline conditions – sets out the current and future baseline conditions, along with the spatial and temporal scope applied;
  - Assessment of effects – sets out how the magnitude of impacts, sensitivity or value of a receptor are considered in evaluating significance;
  - Mitigation – describes how environmental measures to reduce, limit or eliminate effects through embedded, and essential mitigation are considered within the assessment;
  - Monitoring – describes an outline approach to proposed monitoring;
  - Other supporting assessments and documents – provides details of the other studies which have been used to inform the EIA; and
  - Cumulative effects and In-combination effects – describes what in-combination and cumulative effects are. ES Chapter 13 Cumulative Effects (Document Reference 6.2.13) provides the detail of the methodological approach.
- 4.1.4. The scope and adopted methodologies of assessment for each of the investigated environment topics are outlined in ES Chapters 5 to 12 (Document References 6.2.5 to 6.2.12) where they depart from the general methodology set out in this chapter.

## 4.2. EIA Process

### Overview of EIA process

4.2.1. An EIA is a systematic process that examines the likely significant effects (beneficial or detrimental) on the environment resulting from the future construction, operation and decommissioning of a proposed development. The EIA Regulations require that the findings of an EIA are presented in a document known as an ES, which can then be used to inform decision makers and the public about the possible environmental implications of a development and help the decision maker (in the case of a DCO, the Secretary of State (SoS)) determine the application for development consent. The EIA Regulations set out the procedures to be followed in relation to EIAs which must be undertaken for Nationally Significant Infrastructure Projects (NSIPs) in England and Wales.

4.2.2. The main stages of the EIA process are as follows:

- **EIA screening:** screening can be undertaken to determine whether a proposed development constitutes ‘EIA development’, in cases where it is not clear if a proposed development requires an EIA to be undertaken;
- **EIA scoping:** scoping refers to the process of consultation with the Planning Inspectorate (PINS) and consultees in order to identify the necessary scope of assessment for a proposed development, and is described in further detail below;
- **Preliminary Environmental Information Report (PEIR):** the PEIR is used for the purposes of statutory consultation and sets out the information that ‘is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development’ as set out in PINS Advice Note Seven, Section 8.3 [1]; and
- **ES:** the ES (this document) presents the results of the EIA undertaken for a proposed development. It sets out the likely significant effects that would result if the proposed development was implemented, and any proposed mitigation to reduce those significant effects. An ES is submitted as part of the application for development consent and is taken into account during the decision-making process.

### EIA Scoping

4.2.3. EIA scoping is the process of identifying the issues to be considered within the ES and establishing the scope of the assessment. Although scoping is not a mandatory requirement under the EIA Regulations, it is recognised as a useful preliminary procedure which helps to identify the main effects that a proposed development is likely to have on the environment.

4.2.4. An EIA Scoping Report for the Proposed Development was prepared and submitted by JBM Solar Projects UK Limited, now RWE (the Applicant) to PINS on 27 October 2022, with a request for the SoS to adopt a Scoping Opinion. The EIA Scoping Report

set out the proposed scope of work and method to be applied in carrying out the EIA, and the proposed structure of the ES. The EIA Scoping Report is provided in ES Appendix 4.1 (Document Reference 6.4.4.1).

- 4.2.5. PINS reviewed and consulted on the EIA Scoping Report and published a Scoping Opinion on 6 December 2022. The Scoping Opinion is provided in ES Appendix 4.2 (Document Reference 6.4.4.2).
- 4.2.6. The Scoping Opinion and comments from the consultees have been considered in undertaking the EIA and in preparing the ES. A table outlining the key issues raised in the Scoping Opinion and how and where the ES or other DCO application documentation has addressed these points is included in ES Appendix 4.3 Scoping Opinion Response Matrix (Document Reference 6.4.4.3).
- 4.2.7. Schedule 4, Part 5 of the EIA Regulations requires a description of the likely significant transboundary effects to be provided in an ES. The Scoping Opinion (Document Reference 6.4.4.2) concludes that the Proposed Development is not likely to have significant effects on the environment in another European Economic Area (EEA) State. For the avoidance of doubt, this point has been reconsidered at the ES stage, and that consideration confirmed that there are no pathways of effect to other EEA States. Transboundary effects have therefore been scoped out from further assessment within the ES.
- 4.2.8. A summary of the scope of the EIA is presented in Table 4-1.

**Table 4-1 Summary of the scope of the EIA**

Topic	Scoped in/out of the ES	Notes/Rationale
<b>Climate Change</b>	▪ Scoped in	▪ ES Chapter 5 (Document Reference 6.2.5)
<b>Biodiversity</b>	▪ Scoped in	▪ ES Chapter 6 (Document Reference 6.2.6)
<b>Landscape and Visual</b>	▪ Scoped in	▪ ES Chapter 7 (Document Reference 6.2.7)
<b>Cultural Heritage and Archaeology</b>	▪ Scoped in	▪ ES Chapter 8 (Document Reference 6.2.8)
<b>Land use and Socio-Economics</b>	▪ Scoped in	▪ ES Chapter 9 (Document Reference 6.2.9)
<b>Hydrology and Flood Risk</b>	▪ Scoped in	▪ ES Chapter 10 (Document Reference 6.2.10)
<b>Noise and Vibration</b>	▪ Scoped in	▪ ES Chapter 11 (Document Reference 6.2.11)
<b>Traffic and Transport</b>	▪ Scoped in	▪ ES Chapter 12 (Document Reference 6.2.12)
<b>Cumulative Effects</b>	▪ Scoped in	▪ ES Chapter 13 (Document Reference 6.2.13)
<b>Air Quality</b>	▪ Scoped out	▪ ES Appendix 2.4 Construction Dust Assessment (Document Reference 6.4.2.4)

<b>Topic</b>	<b>Scoped in/out of the ES</b>	<b>Notes/Rationale</b>
<b>Arboriculture</b>	<ul style="list-style-type: none"> <li>▪ Scoped out</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES Appendix 7.7 Arboricultural Impact Assessment (Document Reference 6.4.7.7).</li> </ul>
<b>Electric, Magnetic and Electromagnetic Fields</b>	<ul style="list-style-type: none"> <li>▪ Scoped out</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Proposed Development is not anticipated to exceed the International Commission on Non-Ionizing Radiation Protection exposure guidelines [2], and the design of the Proposed Development considers any infrastructure constraints.</li> <li>▪ A separate Electric, Magnetic and Electromagnetic Fields ES chapter is not considered to be required.</li> </ul>
<b>Glint and Glare</b>	<ul style="list-style-type: none"> <li>▪ Scoped out</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES Appendix 2.2 Solar Photovoltaic Glint and Glare Assessment (Document Reference 6.4.2.2)</li> </ul>
<b>Ground Conditions</b>	<ul style="list-style-type: none"> <li>▪ Scoped out</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES Appendix 2.1 Phase 1 Geoenvironmental and Geotechnical Desk Study (Document Reference 6.4.2.1)</li> </ul>
<b>Human Health</b>	<ul style="list-style-type: none"> <li>▪ Scoped out</li> </ul>	<ul style="list-style-type: none"> <li>▪ It is anticipated that there would be limited impacts on human health during the construction and operation of the Proposed Development. Any potential effects are covered elsewhere in the ES, and in supporting documentation.</li> <li>▪ A separate Human Health ES chapter is not considered to be required.</li> </ul>
<b>Major Accidents and Disasters</b>	<ul style="list-style-type: none"> <li>▪ Scoped out</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES Appendix 2.5 Major Accidents and Disasters Assessment (Document Reference 6.4.2.5).</li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>▪ Scoped out</li> </ul>	<ul style="list-style-type: none"> <li>▪ ES Appendix 2.3 Assessment of Likely Waste Arisings is included within (Document Reference 6.4.2.3).</li> </ul>

## **Policy and Guidance**

4.2.9. In addition, in undertaking and EIA and preparing this ES, reference has been made to relevant policy, guidance and advice. This has included the following:

- Overarching National Policy Statement (NPS) for Energy (EN-1) [3];
- NPS for Renewable Energy Infrastructure (EN-3) [4];
- NPS for Electricity Networks Infrastructure (EN-5) [5];
- National Planning Policy Framework (NPPF) [6];
- PINS Advice Note Six: preparation and submission of application documents [7];
- PINS Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping [1];
- PINS Advice Note Nine: Rochdale Envelope [8];

- PINS Advice Note Seventeen: Cumulative Effects Assessment [9]; and
- PINS Advice Note Eighteen: The Water Framework Directive [10].

4.2.10. Topic specific policy and guidance have been considered within each of the topic chapters, set out within ES Chapters 5 to 13 of (Document References 6.2.5 to 6.2.13).

### **Assumptions and Limitations**

4.2.11. In accordance with the EIA Regulations, difficulties encountered during assessment work and known limitations and assumptions used for individual assessment areas are set out in ES Chapters 5 to 12 (Document References 6.2.5 to 6.2.12).

4.2.12. General limitations to the ES include:

- baseline conditions are specific to each aspect of the environment and are considered to be accurate at the time when surveys are undertaken, however, it is recognised that environmental conditions may change during the course of the Proposed Development and these are described as appropriate as part of the future baseline;
- the assessment presented in this ES is based on survey work completed at the time of writing. Each topic chapter clearly sets out what additional surveys will be undertaken post- submission, where there remains surveys to complete;
- the assessment presented in this ES is based on construction information available at the time of writing, and the construction phases and programme described in Table 4-2;

4.2.13. In addition, best practice guidance from the Institute of Environmental Management and Assessment (IEMA) has informed the assessment. Relevant to this ES is a growing emphasis on undertaking proportionate assessments which reflect those aspects of the environment with potential to have significant effects and clarify those areas where there is little reasonable potential for this to occur.

### **Parameters, Uncertainty and Flexibility**

4.2.14. There are some aspects of the design of the Proposed Development that are not fixed, in order to maintain flexibility to meet the changing demands of the UK solar energy market and respond to changes in technology that may emerge prior to construction. The assessment of the Proposed Development in this ES has therefore adopted a Rochdale Envelope approach as described in PINS Advice Note Nine [8].

#### **Parameters**

4.2.15. ES Chapter 2 The Proposed Development (Document Reference 6.2.2) contains details of the parameters and controls defining those aspects of the Proposed Development that are capable of having significant environmental effects, as defined in the EIA Regulations.

- 4.2.16. The Design Approach Document (Document Reference 7.2) establishes the design principles for the Proposed Development and sets out how it satisfies design criteria in relevant policy and guidance, taking into account the local context and environment in which it is situated. It defines parameters for the detailed design of the Proposed Development to ensure that the design principles are met and secured via requirements of the draft DCO (Document Reference 3.1).

#### Rochdale Envelope Approach

- 4.2.17. Where flexibility is required, the 'Rochdale Envelope' approach has been applied to ensure a robust assessment of the likely significant environmental effects of the Proposed Development. This involves assessing the maximum (and where relevant, minimum) parameters for the elements where flexibility is sought, recognising that the worst-case parameter for one technical assessment may differ from another. Where this approach is applied, this has been confirmed within the relevant topic chapters of this ES.
- 4.2.18. As is relevant for each technical discipline, alternative designs under the Rochdale Envelope approach have been assessed, in order to predict worst-case overall impacts. These have been used in the assessment of significance of effects. Each of the ES Chapters 5 to 12 (Document References 6.2.5 to 6.2.12) describe the parameters applied in relation to the particular discipline. Where flexibility is to be retained in the DCO application, any changes to design parameters remain within the likely worst-case envelope. Justification for the need to retain flexibility in certain parameters is outlined in ES Chapter 2 The Proposed Development (Document Reference 6.2.2).

### **4.3. Baseline conditions**

- 4.3.1. In order to assess the effects of the Proposed Development on the environment, it is important to understand the environment that would be affected by the Proposed Development, known as the 'baseline'. Understanding the baseline allows the measurement of changes that would be caused by the Proposed Development.
- 4.3.2. Due to the long timescales required to deliver the construction of the Proposed Development, the EIA has been carried out in relation to conditions that are likely to occur in future construction and operational years (the 'future baseline'), defined further below in paragraphs 4.3.6 - 4.3.9.
- 4.3.3. The ES presents baseline information representing the conditions of the environment at the time of writing. When describing the future baseline scenario for each environmental factor within the respective topic chapters, readily available information such as local plans and climate change scenario data has been utilised to provide a description of the natural changes in the local environment over an appropriate timescale that the datasets support. This is based on the study area identified for each topic chapter.



- 4.3.4. Detailed environmental information relating to the existing environmental baseline has been collected. This baseline information has been gathered from various sources, including:
- online/digital resources;
  - data searches, e.g., Local Biological Record Centres, Historic Environment Record;
  - baseline site surveys; and
  - available environmental information submitted in support of other planning applications for development in the vicinity.

- 4.3.5. The full results from all baseline data collection and surveys are described within ES Chapters 5 to 12 (Document References 6.2.5 to 6.2.12), as well as any limitations and assumptions with the data. Results obtained from ES Chapters 5 to 12 (Document Reference 6.2.5 to 6.2.12) have been used to inform ES Chapter 13 Cumulative Effects (Document Reference 6.2.13).

#### **Study area: spatial and temporal scope**

- 4.3.6. 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 5 to 12 (Document References 6.2.5 to 6.2.12). Specific study areas are defined in each topic chapter and allows for assessment of indirect as well as direct effects, together with off-site factors, such as traffic routes, where relevant. These take account the geographic scope of the potential impacts relevant to that topic and/or of the information required to assess the impacts. The study area for each environmental topic incorporates the Order Limits as a minimum for the Proposed Development. They are also used to inform the assessment of cumulative effects in ES Chapter 13 Cumulative Effects (Document Reference 6.2.13).
- 4.3.7. Specific temporal periods are defined for the assessment of baseline conditions and the impacts of the Proposed Development. In doing so, consideration has been given to the worst-case durations of construction and operational 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.
- 4.3.8. The assessment has considered effects at the construction, operation and decommissioning phases. The definitions of these are presented in Table 4-2.
- 4.3.9. The future baseline scenario describes the changes from the current baseline scenario as far as natural changes can be established, although it is noted without the Proposed Development that the land within the Order Limits would continue to be used for agricultural purposes.

**Table 4-2 Baseline scenarios**

Baseline scenarios	Description
<b>Construction phase – current baseline (Year One to Two)</b>	<ul style="list-style-type: none"> <li>▪ This relates to all works associated with construction of the Proposed Development, comprising installation of the solar PV modules and cabling.</li> <li>▪ It would take approximately 12-18 months to construct the Proposed Development in a single phase, or 18-24 months to undertake the construction in phases (e.g. moving from east to west) following the granting of the DCO application.</li> </ul>
<b>Operational phase – future baseline (from Year Two)</b>	<ul style="list-style-type: none"> <li>▪ This relates to effects once the Proposed Development is installed and in use.</li> <li>▪ The opening year is when the Proposed Development is to become operational, and future year scenario is after the opening year when the mitigation measures are likely to have achieved their desired outcome within 15 years.</li> <li>▪ The Proposed Development is assumed to have a design life of 40 years.</li> </ul>
<b>Decommissioning phase – future baseline (from Year 40)</b>	<ul style="list-style-type: none"> <li>▪ This relates to effects at the end of operation as the Proposed Development is shut down.</li> <li>▪ The decommissioning year will take place following the operation of the Proposed Development, which is expected to be 40 years from the date of energisation. Decommissioning will take approximately 6 – 12 months, potentially in a phased approach.</li> </ul>

## 4.4. Assessment of effects

### Significance of effect

- 4.4.1. The EIA process requires the identification of the likely significant environmental effects of the Proposed Development. This includes the consideration of the likely environmental effects (beneficial or adverse) during the construction, operation and decommissioning of the Proposed Development.
- 4.4.2. The likely effect that the Proposed Development may have on identified environmental receptors is influenced by a combination of the sensitivity (or importance) of the receptor and the predicted magnitude of impact from the baseline conditions.

### Assigning value of receptors

- 4.4.3. Receptors are defined as the physical resource or ‘user group’ that would experience an effect’ of the Proposed Development, and these are identified as part of developing the baseline conditions.
- 4.4.4. The environmental effect of the Proposed Development on receptors would depend on the spatial relationship between the source of the effect and the receptor, as well as the environmental sensitivity of a receptor.
- 4.4.5. Assignment of environmental sensitivity of a receptor generally depends on the vulnerability, recoverability and value/importance of the receptor. The environmental sensitivity (or importance) has been determined using the categories set out in Table 4-3.

**Table 4-3 Indicative environmental sensitivity of a receptor**

Sensitivity	Criteria
<b>High</b>	<ul style="list-style-type: none"> <li>High importance and rarity, international level and very limited potential for substitution</li> </ul>
<b>Medium</b>	<ul style="list-style-type: none"> <li>High or medium importance and rarity, regional level and limited potential for substitution</li> </ul>
<b>Low</b>	<ul style="list-style-type: none"> <li>Low or medium importance and rarity; and local level</li> </ul>
<b>Negligible</b>	<ul style="list-style-type: none"> <li>Very low importance or rarity and local level</li> </ul>

4.4.6. Where other categories of sensitivity have been used, this has been set out in the individual environmental topic assessments.

### **Magnitude of impact**

4.4.7. Magnitude of impact is defined by the extent of change from the identified baseline conditions, irrespective of the value/sensitivity of a receptors.

4.4.8. The categorisation of the magnitude of impact takes into account the following factors:

- extent;
- duration;
- frequency; and
- reversibility.

4.4.9. Impacts are defined as either beneficial or adverse. As a guide, the magnitude of impact is specified in topic chapters and has generally been assigned using the categories outlined in Table 4-4.

**Table 4-4 Indicative magnitude of impact**

Sensitivity	Criteria
<b>High</b>	<ul style="list-style-type: none"> <li>Total loss or major alteration to key elements/features of the baseline (i.e., pre-development) conditions.</li> </ul>
<b>Medium</b>	<ul style="list-style-type: none"> <li>Partial loss or alteration to one or more key elements/features of the baseline (i.e., pre-development) conditions.</li> </ul>
<b>Low</b>	<ul style="list-style-type: none"> <li>Minor shift away from baseline (i.e., pre-development) conditions.</li> </ul>
<b>Negligible</b>	<ul style="list-style-type: none"> <li>Very slight change from baseline (i.e., pre-development) conditions</li> </ul>

4.4.10. Further details of the topic-specific methodologies adopted for the EIA have been defined within the methodology section of each of the topic chapters; ES Chapters 5 to 12 (Document References 6.2.5 to 6.2.12).

### Assigning significance

- 4.4.11. The overall significance of the effect is assigned by the interaction of both sensitivity of the receptor and magnitude of impact. The level of significance has been determined in each of the environmental topic assessments and considers relevant topic-specific legislation, planning policy and guidance. Levels of significance of effects generally follows the following scale outlined in Table 4-5 and is either beneficial or adverse.

**Table 4-5 Matrix to classify environmental effects**

		Magnitude of impact			
		High	Medium	Low	Negligible
Sensitivity of resource	High	Major	Major	Moderate	Minor
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible

- 4.4.12. The evaluation of significance is a product of the likelihood and consequence of each impact as set out in Table 4-6. Significant effects are generally defined as those that are of Moderate or Major significance. The conclusions of the significance of each impact incorporates embedded design and mitigation measures.
- 4.4.13. The topic assessments have adopted this general approach to assigning significance, unless stated in the individual topic chapters.

**Table 4-6 Indicative significant criteria for use within the EIA**

Significance	Criteria
<b>Major</b>	<ul style="list-style-type: none"> <li>These effects are likely to be key factors or important considerations at a regional or district scale but, if adverse, are potential concerns to the project, depending upon the relative importance attached to the issue during the decision-making process. They are generally, but not exclusively associated with sites and features of national importance and resources/features which are unique and which, if lost, cannot be replaced or relocated.</li> </ul>
<b>Moderate</b>	<ul style="list-style-type: none"> <li>These effects, if adverse, while important at a local scale, are not likely to be key decision-making issues. Nevertheless, the cumulative effect of such issues may lead to an increase in the overall effects on a particular area or on a particular resource.</li> </ul>
<b>Minor</b>	<ul style="list-style-type: none"> <li>These effects may be raised as local issues but are unlikely to be of importance in the decision-making process. Nevertheless, they are of relevance in the detailed design of the project.</li> </ul>
<b>Negligible</b>	<ul style="list-style-type: none"> <li>Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.</li> </ul>

- 4.4.14. The likely residual effects of the Proposed Development are set out for each topic assessment assuming implementation of all mitigation measures identified. This includes an assessment of significance of those effects in accordance with the identified criteria.

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

- the relevant NPS relating to energy (noting that at time of submission of this DCO application, there is no specific NPS for solar development, although revised NPS EN-3 [4] is pending designation and sets out policy requirements specific to solar generation, considered to be of very significant weight to the application);
- the 2050 Net Zero GHG emissions target by 2050 through the Climate Change Act 2008 (2050 Target Amendment) Order 2019;
- the NPPF [6];
- local planning policy and relevant planning practice guidance;
- legislative requirements;
- 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.

## 4.5. Mitigation

4.5.1. This ES includes a description of the mitigation measures envisaged to prevent or reduce any significant adverse effects. If necessary, monitoring may also have been prescribed. Mitigation measures are described within ES Chapter 2 The Proposed Development (Document Reference 6.2.2) and ES Chapters 5 to 13 (Document References 6.2.5 to 6.2.13).

4.5.2. In line with IEMA Guidance and professional best practice, consideration has been given to key types of mitigation:

- **Embedded mitigation** - project design principles adopted to avoid or prevent adverse environmental effects; and
- **Essential mitigation** - measures required to reduce and if possible offset likely significant adverse environmental effects, in support of the reported significance of effects in the environmental assessment.

### Embedded mitigation

4.5.3. Defined as “an intrinsic part of the project design”, this mitigation is a result of design evolution. Embedded mitigation describes efforts undertaken to prevent or reduce potential significant adverse effects by iteratively altering design throughout the evolution of the Proposed Development. This is mitigation that would inherently be delivered and is therefore considered to form part of the Proposed Development and has been taken into account in the assessment of effects of the EIA.

- 4.5.4. Embedded mitigation is reported as part of ES Chapter 2 The Proposed Development (Document Reference 6.2.2), including highlighting where key changes to the design have been made specifically to avoid or reduce an environmental effect. ES Chapter 3 Alternatives and Design Iteration (Document Reference 6.2.3) describes alternative options that have been considered for the Proposed Development from initial site selection and throughout the design development process. It summarises how an assessment of alternatives has been undertaken and identifies the factors that have informed the design of the Proposed Development. Where a specific design aspect has been incorporated in order to avoid a significant environmental effect, this is noted in the ES in order to record the reason for the design decision, and ensure it is carried through to detailed design.
- 4.5.5. ES Figure 2.20 Landscape Concept Masterplan (Document Reference 6.3.2.20) presents the landscaping and ecological mitigation and enhancements for the Proposed Development. Alongside this, an Outline Landscape and Ecology Management Plan (LEMP) (Document Reference 6.4.2.14) has been produced to set out the measures proposed to mitigate effects on landscape, biodiversity and heritage features. The exact detail of mitigation locations and designs will be determined through the detailed design process and a final environmental mitigation design will be developed as part of the pre-commencement process as secured through the draft DCO (Document Reference 3.1).
- 4.5.6. Management plans are provided as part of the DCO application, as a mechanism for securing required mitigation, and are considered to be embedded mitigation. It is assumed, as embedded mitigation, that all standard construction best practice measures to mitigate the environmental effects of construction will be implemented in line with the Outline Construction Environmental Management Plan (CEMP) (Document Reference 6.4.2.6). These are identified and secured via the Outline CEMP and listed in the Mitigation Route Map (Document Reference 7.8).
- 4.5.7. As set out in the draft DCO (Document Reference 3.1) the Outline CEMP (Document Reference 6.4.2.6) would be a certified document and compliance with the contents of the Outline CEMP would be secured via DCO requirement. The document will continue to evolve into the CEMP for the construction stage of the Proposed Development, reflecting confirmed construction methodologies and approaches and setting out exactly how each of the actions and commitments will be delivered.
- 4.5.8. See ES Chapter 2 The Proposed Development (Document Reference 6.2.2) for further details of the management plans that are submitted as part of the DCO application.

### **Essential Mitigation**

- 4.5.9. Where avoidance of an impact through embedded mitigation is not possible, or is only partly effective, further mitigation is considered, referred to as 'essential mitigation'. Essential mitigation falls into three broad categories:

- measures that do not remove an impact but make it less significant. A typical example on the Proposed Development may include planting trees to screen views of the Proposed Development where it is visually intrusive;
- the like-for-like replacement of a feature that would be lost. For example, this may include the creation of hedgerows within the Order Limits to replace those for which removal cannot be avoided; and
- the provision of a beneficial effect that is related to the impact but is not a like-for-like replacement of the feature to be lost. A typical example would be the installation of bird nesting boxes to improve nesting habitat for birds.

- 4.5.10. Mitigation identified during the EIA process that is required to further prevent, reduce and, where possible, offset any adverse effects on the environment are described in ES Chapters 5 to 12 (Document References 6.2.5 to 6.2.12).
- 4.5.11. The essential mitigation measures identified are secured through the draft DCO (Document Reference 3.1) via the relevant management plan, namely the Outline CEMP (Document Reference 6.4.2.6) and the Outline LEMP (Document Reference 6.4.2.14). A full list of all mitigation measures proposed and how they are secured in the DCO is provided in the Mitigation Route Map (Document Reference 7.8).
- 4.5.12. The likely significant effects of the Proposed Development are identified taking into account the embedded mitigation. The significance of an effect is then reported after an assessment of the effectiveness of any essential mitigation that has been identified specifically to address an effect (the residual effect). This approach allows for all deliverable and committed mitigation to be taken into account in determining the significance of effects reported in this ES.

### **Implementation and enforcement of mitigation**

- 4.5.13. Mitigation will be secured through the DCO (Document Reference 3.1). It is a legal requirement of the developer to comply with the DCO during construction, operation and decommissioning of the Proposed Development, including with regard to delivery and maintenance of the secured mitigation measures.

### **Enhancement**

- 4.5.14. Enhancement is a measure that is over and above what is required to mitigate the adverse effects of a project. Enhancement opportunities have been identified throughout the Order Limits. They are reported, where applicable, in ES Chapters 5 to 12 (Document Reference 6.2.5 to 6.2.12) and the Outline LEMP (Document Reference 6.4.2.13).

## **4.6. Monitoring**

- 4.6.1. Where the environmental assessment 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.

- 4.6.2. Monitoring measures would be undertaken as required during construction, operation and decommissioning. These measures will be secured in the DCO application through the management plans for each phase of the Proposed Development (ES Appendices 2.6 to 2.15 (Document References 6.4.2.6 to 6.4.2.15)).
- 4.6.3. Monitoring measures are reported, where applicable, in ES Chapters 5 to 12 (Document Reference 6.2.5 to 6.2.12) and are secured (where necessary) through DCO requirements.

## **4.7. Other supporting assessments and documents**

- 4.7.1. This ES is supported by several technical assessments undertaken in line with specific policy or legislation. These provide additional information to inform the design and assessment. An outline of these preliminary assessments is provided below for information.
- 4.7.2. For a description of the proposed construction, operation and decommissioning management plans, see ES Chapter 2 The Proposed Development (Document Reference 6.2.2).

### **Habitats Regulations Assessment**

- 4.7.3. The European Habitats Directive was transposed into UK legislation through the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations). These regulations set out procedures for dealing with the effects of development on the national site network, which comprises Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). These are collectively referred to as “European sites”. As a matter of policy, the Government applies the same procedures to possible SPAs, possible SACs, Ramsar sites and proposed Ramsar sites.
- 4.7.4. Under Regulation 63 of the Habitats Regulations, an appropriate assessment is required where a plan or project (in this case an NSIP application) is likely to have a significant effect upon a European site, either individually or in combination with other projects. This information takes the form of a report.
- 4.7.5. Further to this, Regulations 64 and 68 provides that where an appropriate assessment has been carried out and results in a negative assessment (that is, the development will adversely affect the integrity of the site(s) despite any proposed avoidance or mitigation measures or if uncertainty remains), consent can only be granted if there are no alternative solutions, there are Imperative Reasons of Overriding Public Interest (IROPI) for the development, and compensatory measures have been secured.
- 4.7.6. An HRA screening assessment has been completed and is provided in ES Appendix 6.5 HRA No Significant Effects Report (Document Reference 6.4.6.5). This concludes that



there is no potential for Likely Significant Effects (LSE). Potential impacts on European sites associated with potential disturbance and displacement impacts will be sufficiently mitigated through best practice measures to be set out in ES Appendix 2.6 Outline CEMP (Document Reference 6.4.2.6).

### **Water Framework Directive Assessment**

- 4.7.7. The Water Framework Directive (WFD) (2000) was transposed into domestic law by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (the WFD Regulations). It provides a structure for the protection and enhancement of surface fresh water, estuaries, coastal waters and groundwater.
- 4.7.8. The WFD Regulations aim to enhance the current status of all waterbodies (with a target to achieve Good Ecological Status) and prevent deterioration of waterbodies from their current status due to pollution. The requirements of the WFD Regulations have been taken into account when planning all activities that may impact the water environment.
- 4.7.9. ES Chapter 10 Hydrology and Flood Risk (Document Reference 6.2.10) details all surface water and groundwater receptors located within the study area of the Proposed Development. This includes a description of existing water quality, water quantity and WFD Status.
- 4.7.10. ES Appendix 10.2 Water Framework Directive Assessment (Document Reference 6.4.10.2) has been completed, in line with the methodology outlined in the EIA Scoping Report. This concludes that the Proposed Development can be delivered in compliance with the WFD and is not expected to increase pollution to the water bodies draining the Order Limits.

### **Flood Risk Assessment**

- 4.7.11. ES Appendix 10.1 Flood Risk Assessment (FRA) and Drainage Strategy (Document Reference 6.4.10.1) has been undertaken in accordance with national policy and has considered flood risk both to and from the Proposed Development. It demonstrates how this risk is intended to be managed in the future, including with the influence of climate change.
- 4.7.12. The majority of the Proposed Development is at a low risk of surface water flooding (Flood Zone 1), however two Panel Areas are located with Flood Zone 3, attributed to Little Stainton Beck and Bishopton Beck.
- 4.7.13. An Outline Surface Water Drainage Strategy is included as part of the FRA (Document Reference 6.4.10.1) to manage any increase in surface water runoff, from landscaping or solar PV modules.
- 4.7.14. ES Chapter 10 Hydrology and Flood Risk (Document Reference 6.2.10) summarises the likely effects on flood risk, and the status of discussions with the Lead Local Flood Authority.

## Transport Statement

4.7.15. The environmental effects of traffic and transport are addressed within ES Chapter 11 Noise and Vibration (Document Reference 6.2.11) and Chapter 12 Traffic and Transport (Document Reference 6.2.12).

4.7.16. ES Appendix 12.1 Transport Statement (TS) (Document Reference 6.4.12.1) includes the assessment of the traffic impacts of the Proposed Development during construction, operation and decommissioning. The assessment considers the local, regional and national policy context, and details likely trip generation based on the latest guidance. This reports the assessment of the road and wider network capacity, the functionality of junctions, and potential impacts on journey times amongst other things.

## 4.8. Cumulative effects

4.8.1. As part of the EIA process, cumulative effects of the Proposed Development should be considered. This is required within Regulation 4(2)(e) of the EIA Regulations which requires the consideration of ‘interactions’:

*“4. (2) The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors—*

- a) population and human health;*
- b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC(a) and Directive 2009/147/EC(b);*
- c) land, soil, water, air and climate;*
- d) material assets, cultural heritage and the landscape;*
- e) the interaction between the factors referred to in sub-paragraphs (a) to (d).”*

4.8.2. Schedule 4 of the EIA Regulations describes cumulative effects as:

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

4.8.3. These effects are typically distinguished into two types:

- In-combination effects are inter-relationships within the Proposed Development; and
- Cumulative effects of the Proposed Development with ‘other developments’.

### In-combination effects

4.8.4. In-combination effects occur when separate impacts associated with the Proposed Development act on the same receptor, with the potential to lead to a significant

effect. These effects may be additive, for example where noise impacts from construction activities and noise impacts from increased traffic may act upon one receptor. In-combination effects are considered within each relevant environmental topic assessment and are outlined in ES Chapters 5 to 12 (Document References 6.2.5 to 6.2.12).

- 4.8.5. ES Appendix 13.1 In-Combination Effects Table (Document Reference 6.4.13.1) provides a summary table of the in-combination effects identified.

### **Cumulative Effects Assessment**

- 4.8.6. Cumulative effects consider the impacts of other ‘reasonably foreseeable’ developments within the vicinity and context of the Proposed Development.
- 4.8.7. Cumulative effects are effects that, in combination with each other, may be more (or less) than the sum of the individual effects. These may result from incremental changes caused by other existing or approved projects together with the Proposed Development.
- 4.8.8. ES Chapter 13 Cumulative Effects (Document Reference 6.2.13) provides an assessment of in-combination effects and cumulative effects assessment, in line with PINS Advice Note Seventeen Cumulative Effects Assessment [9].

## References

- [1] PINS, “Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements,” 2018. [Online]. Available: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/>. [Accessed 10 August 2023].
- [2] International Commission on Non-Ionizing Radiation Protection, *Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz)*, 1998.
- [3] Department for Energy Security and Net Zero, “Overarching National Policy Statement for Energy (EN-1),” 17 January 2024. [Online]. Available: <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1>. [Accessed 26 January 2024].
- [4] Department for Energy Security & Net Zero, “National Policy Statement for Renewable Energy Infrastructure (EN-3),” 17 January 2024. [Online]. Available: <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3>. [Accessed 26 January 2024].
- [5] Department for Energy Security and Net Zero, “National Policy Statement for Electricity Networks Infrastructure (EN-5),” 17 January 2024. [Online]. Available: <https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5>. [Accessed 26 January 2024].
- [6] Ministry of Housing, Communities and Local Government, “National Planning Policy Framework,” 20 December 2023. [Online]. Available: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>. [Accessed 26 January 2024].
- [7] PINS, “Advice Note Six: preparation and submission of application documents,” 2016. [Online]. Available: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-six-preparation-and-submission-of-application-documents/>. [Accessed 10 August 2023].
- [8] PINS, “Advice Note Nine: Rochdale Envelope,” 2018. [Online]. Available: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/>. [Accessed 10 August 2023].
- [9] PINS, “Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects,” 2019. [Online]. Available: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/>. [Accessed 10 August 2023].
- [10] PINS, “Advice Note Eighteen: the Water Framework Directive,” 2017. [Online]. Available: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18/>. [Accessed 10 August 2023].

- [11] Department of Energy & Climate Change, “National Policy Statement for Renewable Energy Infrastructure (EN-3),” July 2011. [Online]. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/37048/1940-nps-renewable-energy-en3.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37048/1940-nps-renewable-energy-en3.pdf). [Accessed 10 August 2023].
- [12] Department of Energy & Climate Change, “National Policy Statement for Electricity Networks Infrastructure (EN-5),” 2011. [Online]. Available: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47858/1942-national-policy-statement-electricity-networks.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf). [Accessed 10 August 2023].
- [13] Department for Energy Security & Net Zero, “Overarching National Policy Statement for Energy (EN-1),” 22 November 2023. [Online]. Available: <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1>. [Accessed 2 January 2024].