

Proposed Solar PV Development

Preliminary Environmental Information Report – Chapter 4 Approach to EIA

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4. Approach to EIA

4.1. Introduction

- 4.1.1. This chapter provides an overview of the approach to the preliminary 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 will be reported in an Environmental Statement (ES) submitted in support of the application for a Development Consent Order (DCO) for the Proposed Development. This Preliminary Environmental Information Report (PEIR) reports the findings of a preliminary assessment of the likely significant effects of the of the Proposed Development and has been undertaken in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) and relevant guidance, and each of the stages is described in the following sections.
- 4.1.3. This preliminary assessment has been undertaken using information available at the time of writing and has been prepared to provide the information reasonably required for readers to develop an informed view of the likely significant environmental effects of the Proposed Development.
- 4.1.4. This chapter provides an overview of the approach taken to undertake the EIA of the Proposed Development. This includes an overview of the approach to EIA assessment scenarios, as well as the general methodology applied to provide consistency across assessment topics.
- 4.1.5. The scope and adopted methodologies of assessment for each of the investigated environment topics are outlined in the corresponding topic chapters (Chapters 5-12) where they depart from this general methodology.
- 4.1.6. Methodologies relating to any surveys undertaken as part of these specific investigations are also outlined in each of these topic chapters.

4.2. General approach / EIA Approach

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 findings of an EIA are presented in a document known as an Environmental Statement (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 EIA Regulations require that preliminary environmental information, referred to in Regulation 14(2), is provided as part of the duty to consult under the Act. This PEIR has been prepared in accordance with the EIA Regulations and the location of required information in this document is provided as detailed in Table 4-2, of this PEIR.
- 4.2.3. The main stages of the EIA process are as follows:
- **EIA Screening:** Screening is normally undertaken to determine whether a proposed project constitutes 'EIA development', in cases where it is not clear if a project 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 any particular development, described in further detail below.
 - **PEIR:** The PEIR (this document) 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' (Regulation 12(2)(b) of the EIA Regulations) as set out in PINS Advice Note Seven, Section 8.3.
 - **ES:** The ES presents the results of the EIA undertaken for a proposed project. It sets out the likely significant effects that would result if the proposed project 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

- 4.2.4. 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.
- 4.2.5. An EIA Scoping Report was prepared and submitted to PINS on 27 October 2022 with a request for the SoS to adopt a scoping opinion in relation to the Proposed Development. In considering the request for a scoping opinion, the SoS consulted with the relevant statutory stakeholder bodies. The Scoping Opinion was issued by the PINS on 6 December 2022. The EIA Scoping Report and Scoping Opinion are located in Appendices 4.1 and 4.2.
- 4.2.6. A table outlining the key issues raised in the Scoping Opinion and how and where the PEIR, ES or other DCO application documentation will address these points is included in Appendix 4.3 EIA Scoping Opinion Response Matrix.
- 4.2.7. Following receipt of the Scoping Opinion and consultee responses, consultation has been undertaken with stakeholders including PINS to inform further EIA work to be

undertaken and provide clarifications. A summary of the scope which has been assessed in this PEIR, and subject to any further refinement is to be followed in the EIA, is presented in Table 4-1.

Table 4-1 Summary of proposed scope of the EIA

Topic	Scoped in / out of the ES	Notes / Rationale
Climate Change	▪ Scoped in	▪ Chapter 5
Biodiversity	▪ Scoped in	▪ Chapter 6
Landscape and Visual	▪ Scoped in	▪ Chapter 7
Cultural heritage and Archaeology	▪ Scoped in	▪ Chapter 8
Land use and socio-economics	▪ Scoped in	▪ Chapter 9
Hydrology and Flood Risk	▪ Scoped in	▪ Chapter 10
Noise and Vibration	▪ Scoped in	▪ Chapter 11
Traffic and Transport	▪ Scoped in	▪ Chapter 12
Cumulative effects	▪ Scoped in	▪ Chapter 13
Air quality	▪ Scoped out	▪ A Construction Dust Assessment will be included with the Outline EMP, which will accompany the DCO application.
Arboriculture	▪ Scoped out	▪ An Arboricultural Impact Assessment will accompany the DCO application.
Electric, magnetic and electromagnetic fields	▪ Scoped out	<ul style="list-style-type: none"> ▪ The Proposed Development is not anticipated to exceed the International Commission on Non-Ionizing Radiation Protection exposure guidelines [1], and the design of the Proposed Development will consider any infrastructure constraints. ▪ A separate Electric, Magnetic and Electromagnetic Fields ES chapter is not considered to be required.
Glint and glare	▪ Scoped out	▪ A Solar Photovoltaic Glint and Glare Assessment will accompany the DCO application.
Ground conditions	▪ Scoped out	▪ A Phase I Geoenvironmental and Geotechnical Desk Study will accompany the DCO Application
Human health	▪ Scoped out	▪ It is anticipated that there would be limited impacts on human health during the construction and operation of the Proposed Development. Any potential effects will be covered elsewhere in the ES, and in supporting documentation.

Topic	Scoped in / out of the ES	Notes / Rationale
		<ul style="list-style-type: none"> A separate Human Health ES chapter is not considered to be required.
Major accidents and disasters	<ul style="list-style-type: none"> Scoped out 	<ul style="list-style-type: none"> An assessment of battery safety elements and fire risk, and utilities safety will accompany the DCO application.
Waste	<ul style="list-style-type: none"> Scoped out 	<ul style="list-style-type: none"> An assessment of likely waste arisings will accompany the DCO application.

The PEIR

4.2.8. This PEIR contains preliminary information that has been identified so far during the EIA process and clearly sets out what additional work remains to be done to complete an ES. This PEIR will be consulted upon as part of the statutory consultation (See Section 4.3).

4.2.9. The content of preliminary environmental information should follow that required for an ES, to the extent available at the time of the PEIR. This information is set out against the relevant sections in this PEIR as outlined in Table 4-1 below.

Table 4-2 Recommended information for inclusion in the PEIR

Information required to be included as part of the PEI Report (Regulation 14(2) of the EIA Regulations)	Relevant Sections in this PEIR
(a) A description of the proposed development comprising information on the site, design, size and other relevant features of the development	<ul style="list-style-type: none"> Chapter 2 The Proposed Development Figures 2.1 to 2.10
(b) A description of the likely significant effects of the proposed development on the environment	<ul style="list-style-type: none"> Chapters 5 to 14
(c) A description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment	<ul style="list-style-type: none"> Chapters 5 to 14
(d) A description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment	<ul style="list-style-type: none"> Chapter 3 Assessment of Alternatives
(e) A non-technical summary of the information referred to in sub-paragraphs (a) to (d) in this table	<ul style="list-style-type: none"> Non-Technical Summary (Standalone Document)
(f) Any additional information specified in Schedule 4, relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.	<ul style="list-style-type: none"> Chapter 2 The Proposed Development Chapters 5 to 14

4.2.10. The requirements of Regulation 14(2) summarised above are expanded on by Schedule 4 of the EIA Regulations (as identified at sub-paragraph (f)). The detailed requirements of Schedule 4 are addressed in the chapters of this PEIR, and will be addressed in the ES.

Guidance

4.2.11. In addition, in preparing this PEIR, reference has been made to relevant guidance and advice. This has included the following:

- Overarching National Policy Statement (NPS) for Energy (EN-1) [2];
- Draft Overarching NPS for Energy (EN-1) [3] ;
- NPS for Renewable Energy Infrastructure (EN-3) [4];
- Draft NPS for Renewable Energy Infrastructure (EN-3) [5];
- NPS for Electricity Networks Infrastructure (EN-5) [6] ;
- Draft NPS for Electricity Networks Infrastructure (EN-5) [7];
- National Planning Policy Framework (NPPF) [8];
- PINS Advice Note Six: preparation and submission of application documents [9];
- PINS Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping [10];
- PINS Advice Note Nine: Rochdale Envelope [11];
- PINS Advice Note Seventeen: Cumulative Effects Assessment [12]; and
- PINS Advice Note Eighteen: The Water Framework Directive [13].

Assumptions and Limitations

4.2.12. In accordance with the EIA Regulations, difficulties encountered during assessment work and limitations and assumptions used for individual assessment areas will be set out in the PEIR and subsequent ES.

4.2.13. General limitations at this PEIR stage 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 preliminary assessment presented in this PEIR is based on survey work completed at the time of writing. Each topic chapter clearly sets out what additional surveys will be undertaken prior to submission, where there remains surveys to complete;
- The preliminary assessment presented in this PEIR is based on construction information available at the time of writing based on the construction phases and programme described in Section 4.4;
- Transport forecasting has been undertaken to inform the PEIR. Details of the methodology used and margins for error can be found in Chapter 12 Traffic and Transport.
- The assessment of cumulative effects is dependent on the availability of information at the time of assessment in relation to other identified developments.

- 4.2.14. In addition, best practice guidance from IEMA will inform the assessment. Relevant to this PEIR 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.
- 4.2.15. Unless stated otherwise, any references to legislation within the PEIR is as amended and in force at the time of compiling the PEIR. These references will be reviewed and revised, if required, as part of the ES.
- 4.2.16. The consultation on Environmental Outcomes Reports commenced 17 March 2023. The introduction of an outcomes-based approach is at early consultation stage, and therefore should not affect existing best practice in EIA as outlined above.

Parameters, Uncertainty and Flexibility

- 4.2.17. As discussed in Chapter 2 Proposed Development, final design decisions have yet to be finalised for the Proposed Development. This is important as the technology for solar PV and Battery Energy Storage Systems (BESS) advances and to maintain flexibility to meet the changing demands of the UK market, prior to construction. The ‘Rochdale Envelope’ approach has therefore been applied within the EIA process to ensure a robust assessment of the likely significant environmental effects of the Scheme, in accordance with the Planning Inspectorate’s Advice Note Nine: The Rochdale Envelope [11]. 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 chapters of this PEIR.
- 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 Chapters 5 - 12 describe the parameters applied in relation to the particular discipline. As the Proposed Development’s design evolves, key elements of the design may be fixed. However, it is likely that 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 Application, any changes to design parameters will remain within the likely worst-case envelope. Justification for the need to retain flexibility in certain parameters is outlined in Chapter 2 Proposed Development.

4.3. Consultation

Approach to consultation

- 4.3.1. Effective and meaningful engagement and consultation with stakeholders is an essential aspect of developing the design of the Proposed Development and of undertaking a comprehensive EIA. Consultation is an ongoing process, and the publication of this PEIR forms an important part of that process.

- 4.3.2. The Planning Act 2008 ('the Act') [14] requires applicants for DCOs to carry out pre-application consultation on their proposals. There are several requirements as to how this consultation must be undertaken that are set out in the Act and related regulations:
- Section 42 requires the applicant to consult with 'prescribed persons', which includes certain consultation bodies such as the Environment Agency and Natural England, relevant statutory undertakers, relevant local authorities, those with an interest in the land, and other prescribed parties by the Proposed Development;
 - Section 47 requires the applicant to consult with the local community on the development. Prior to this, the applicant must consult on a Statement of Community Consultation (SoCC) with the relevant local authorities. The SoCC must set out the proposed community consultation and, once agreed with the relevant local authorities, a SoCC Notice must be published in local newspapers circulating within the vicinity of the land in question. The consultation must then be carried out in accordance with the final SoCC;
 - Section 48 places a duty on the applicant to publicise the proposed application in the 'prescribed manner' in a national newspaper, the London Gazette, local newspapers circulating within the vicinity of the land and, where relevant, certain marine publications; and
 - Section 49 places a duty on the applicant to take account of any relevant responses received to the consultation and publicity that is required by Sections 42, 47 and 48.
- 4.3.3. JBM Solar sought to gather the views of a variety of representatives of groups with an interest in the area to help shape the Proposed Development at an early stage. This was a method of Collaborative Design, which involved inviting stakeholders to workshops on 12 October 2022, which were then carried out between 1 – 3 November 2022. These stakeholders included local councils, elected representatives, statutory environmental bodies, and local interest groups.
- 4.3.4. JBM Solar engaged with these groups in order to enable the sharing and consideration of local knowledge and technical advice from an early stage of the Proposed Development. The comments made in the Collaborative Design workshops were taken into account to inform the design of the Proposed Development prior to the statutory consultation.
- 4.3.5. The issues raised through the current consultation (May 2023) and how these have been considered and addressed within the design evolution of the Proposed Development and the EIA will be set out in the ES.
- 4.3.6. Compliance with the requirements of the Act and the EIA Regulations will be evidenced in the Consultation Report and ES submitted with the DCO Application, in addition to details of the pre-application consultation undertaken throughout the design and assessment of the Proposed Development.
- 4.3.7. Consultation with statutory consultees and stakeholders is ongoing to help inform the content of this PEIR and the design of the Proposed Development.

- 4.3.8. A number of meetings have taken place with stakeholders to share information on the Proposed Development and the approach to environmental assessment including, but not limited to, the following:
- Stockton-on-Tees Borough Council;
 - Darlington Borough Council;
 - Durham County Council;
 - The host Parish Councils
 - The Planning Inspectorate;
 - Environment Agency;
 - The Lead Local Flood Authority (LLFA);
 - County Archaeologist;
 - Historic England; and
 - Natural England.
- 4.3.9. Topic specific consultation is included within each of the topic Chapters 5 - 12.
- 4.3.10. In addition to engagement with relevant statutory consultees, the Applicant has been in regular discussions with local landowners affected by the Proposed Development.

4.4. Baseline Conditions

- 4.4.1. In order to predict the potential environmental effects of the Proposed Development, it is important to establish the baseline conditions that currently exist within the Site Area and surrounds, in the absence of any development.
- 4.4.2. 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, etc.;
 - baseline site surveys; and
 - available environmental information submitted in support of other planning applications for development in the vicinity.
- 4.4.3. The current environmental and physical conditions of the relevant study areas ('the baseline') have been established so that a comparison of future changes as a result of the Proposed Development can be understood, and potentially significant effects can be identified, where relevant to the assessment methodology.
- 4.4.4. Site visits, walkover surveys and initial desk-based baseline data collection have been undertaken to determine the baseline conditions. Details of specific visits and survey

results are provided in individual assessment chapters of this PEIR. Where further studies remain to be completed they are made clear in the relevant assessment chapters of this PEIR. The full results from all baseline data collection and surveys will be described within the ES.

- 4.4.5. 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 4.4.8 – 4.4.10.
- 4.4.6. The baseline conditions information used within the assessment is detailed within Chapters 5 - 12 of this PEIR, and outlines any limitations and assumptions with the data.

Spatial and temporal scope

- 4.4.7. Spatially, the area over which effects could occur may be wider than the Site Area. The appropriate study area has been determined for each environmental topic and set out in PEIR Chapters 5 - 12. Specific study areas will be defined in each topic section and will allow for assessment of indirect as well as direct effects, together with off-site factors, such as traffic routes, where relevant. There are also used to inform the assessment of cumulative effects in Chapter 13.
- 4.4.8. Specific temporal periods will be defined for the assessment of baseline conditions and the impacts of the proposals. In doing so, consideration will be given to the worst case durations of construction and operational activities. Where relevant, consideration will be 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 will be defined within the ES.
- 4.4.9. The assessment will consider effects at the construction, operation and decommissioning phases. The definitions of these are presented in Table 4-3.
- 4.4.10. The future baseline scenario will describe 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 Site Area would continue to be used for agricultural purposes.

Table 4-3 Baseline scenarios

Baseline scenarios	Description
Construction phase – current baseline (Year One)	<ul style="list-style-type: none"> ▪ This relates to all works associated with construction of the Proposed Development, comprising installation of the solar PV modules and cabling ▪ The construction phase is proposed to be over approximately 12 months, commencing following the granting of the DCO Application in a phased approach.
Operational phase – future baseline (from Year Two)	<ul style="list-style-type: none"> ▪ This relates to effects once the Proposed Development is installed and in use.

Baseline scenarios	Description
	<ul style="list-style-type: none"> ▪ The opening year when the Proposed Development is to become operational, and future year scenario after the opening year when the mitigation measures are likely to have achieved their desired outcome within 15 years. ▪ The Proposed Development is assumed to have a design life of 40 years.
Decommissioning phase – future baseline (from Year 40)	<ul style="list-style-type: none"> ▪ This relates to effects at the end of operation as the Proposed Development is shut down. ▪ 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.

4.5. Assessment of effects

Significance of effect

- 4.5.1. 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.
- 4.5.2. The likely effect that the Proposed Development may have on identified environmental receptors will be 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

- 4.5.3. 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.
- 4.5.4. 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.
- 4.5.5. Assignment of environmental sensitivity of a receptor will generally depend on the vulnerability, recoverability and value/importance of the receptor. The environmental sensitivity (or importance) will be determined using the categories set out in Table 4-4.

Table 4-4 Indicative environmental sensitivity of a receptor

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

4.5.6. Where other categories of sensitivity have been used, this will be set out in the individual environmental topic assessment.

Magnitude of impact

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

4.5.8. The categorization of the magnitude of impact will take into account the following factors:

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

4.5.9. Impacts will be defined as either beneficial or adverse. As a guide, the magnitude of impact will be specified in topic chapters and generally be assigned using the categories outlined in Table 4-5.

Table 4-5 Indicative magnitude of impact

Sensitivity	Criteria
High	▪ Total loss or major alteration to key elements/features of the baseline (i.e., pre-development) conditions.
Medium	▪ Partial loss or alteration to one or more key elements/features of the baseline (i.e., pre-development) conditions.
Low	▪ Minor shift away from baseline (i.e., pre-development) conditions.
Negligible	▪ Very slight change from baseline (i.e., pre-development) conditions

4.5.10. Further details of the topic-specific methodologies adopted for the EIA will be defined within the methodology section of each of the topic chapter:

Assigning significance

4.5.11. The overall significance of the effect will be assigned by the interaction of both sensitivity of the receptor and magnitude of impact. The level of significance will be determined in each of the environmental topic assessments and will consider relevant topic-specific legislation, planning policy and guidance. Levels of significance of effects will generally follow the following scale outlined in Table 4-6 and will be either beneficial or adverse.

Table 4-6 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

4.5.12. The evaluation of significance is a product of the likelihood and consequence of each impact as set out in Table 4-7. Significant effects are generally defined as those that are of Moderate or Major significance. The conclusions of the significance of each impact will incorporate embedded design and mitigation measures.

4.5.13. The topic assessments will adopt this general approach to assigning significance, unless stated in the individual topic chapters.

4.5.14. The likely residual effects of the Proposed Development are set out for each topic 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 there is no specific NPS for solar development, although the new Draft NPS Renewable Energy (EN-3) Sections 2.47 – 2.54 sets out proposed policy requirements specific to solar generation; subject to consultation and implementation thereafter);
- the 2050 Net Zero GHG emissions target by 2050 through the Climate Change Act 2008 (2050 Target Amendment) Order 2019;
- the NPPF;
- 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.

Table 4-7 Indicative significant criteria for use within the EIA

Significance	Criteria
Major	<ul style="list-style-type: none"> ▪ 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.
Moderate	<ul style="list-style-type: none"> ▪ 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.
Minor	<ul style="list-style-type: none"> ▪ 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.
Negligible	<ul style="list-style-type: none"> ▪ Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

4.6. Mitigation

4.6.1. This PEIR includes a description of the measures envisaged to prevent or reduce any significant adverse effects. If necessary, monitoring may also have been prescribed.

4.6.2. In line with IEMA Guidance and professional best practice, consideration will be given to key types of mitigation:

- Embedded mitigation (project design principles adopted to avoid or prevent adverse environmental effects).
- Additional 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

4.6.3. 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 will inherently be delivered and is therefore considered to form part of the Proposed Development and will be taken into account in the initial assessment of effects of the EIA. For example, the replacement public open space / Public Rights of Way or appropriate drainage design.

4.6.4. At this stage in the project, the Proposed Development has been through design development which has identified mitigation measures and design principles that have been embedded into the design and layout of the Proposed Development. In addition, Management Plans will be provided as part of the DCO Application, as a mechanism for securing required mitigation, and are therefore considered to be embedded

mitigation. This will include the Outline EMP, which includes practices to manage contractor activities and minimise nuisance effects that the contractor will be obliged to implement. For further details on Management Plans, see below.

- 4.6.5. A Design and Access Statement or similar document(s) will be produced with the DCO application which will define the design principles for the Proposed Development to be secured and implemented through the DCO.

Additional Mitigation (enhancement)

- 4.6.6. Individual topic assessments will develop additional mitigation that is to be implemented to reduce identified significant adverse effects. These measures are expected to be secured through the DCO application by various mechanisms. For example the areas allocated for potential biodiversity enhancement. Mechanisms which secure this mitigation will be confirmed in the ES.

4.7. Other supporting studies and management plans

- 4.7.1. This PEIR 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 Chapter 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 will be prepared and submitted with the DCO application. However, given the avoidance of Panel Areas close to large expanses of open water and the large expanse of additional agricultural land available close to the SPA and Ramsar site, no significant effects are envisaged.

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. Chapter 10 Hydrology and Flood Risk 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. A Water Framework Directive Assessment has been completed, in line with the methodology outlined in the EIA Scoping Report and is provided in Appendix 10.2 to this PEIR. This concluded 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 Site Area.

Flood Risk Assessment

- 4.7.11. A Flood Risk Assessment (FRA) has been undertaken in accordance with the NPPF. This FRA is provided as Appendix 10.1 to the PEIR 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 to manage any increase in surface water runoff, from landscaping or solar PV modules.

- 4.7.14. Chapter 10 Hydrology and Flood Risk 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 Chapter 11 Noise and Vibration and Chapter 12 Traffic and Transport.
- 4.7.16. A Transport Statement (TS) will be included with the DCO application. This will include the assessment of the surface traffic impacts of the Proposed Development during construction and operational traffic. The assessment will consider the local, regional and national policy context, and details modelled surface traffic movements based on the latest guidance. This will report the assessment of the road and wider network capacity, the functionality of junctions, and potential impacts on journey times amongst other things.

4.8. Monitoring

- 4.8.1. Where relevant, monitoring measures have been identified during each aspect assessment where required to ensure the ongoing efficacy of measures to mitigate significant effects as a result of the Proposed Development. These measures have been outlined in each individual aspect chapter of this PEIR (Chapters 5 to 12 of this PEIR), and will be secured (where necessary) through DCO requirements.

4.9. Cumulative effects

- 4.9.1. Schedule 4 of the EIA Regulations, (Regulation 14(2)) require that the ES includes a description of the cumulation of effects with other existing or approved projects. These effects are typically distinguished into two types:
- In-combination effects are interrelationships within the Proposed Development; and
 - Cumulative effects of the Proposed Development with ‘other developments’.

In-combination effects

- 4.9.2. 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 will be considered within each relevant environmental topic’s chapter of the PEIR and ES.

Cumulative Effects Assessment

- 4.9.3. Cumulative effects consider the impacts of other ‘reasonably foreseeable’ developments within the vicinity and context of the Proposed Development.

- 4.9.4. 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.
- 4.9.5. Chapter 13 of this PEIR provides an overview of the approach to undertaking the in-combination effects and cumulative effects assessment.

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