

Gate Burton Energy Park Environmental Statement

Chapter 5: EIA Methodology
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5. Environmental Impact Assessment Methodology

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 mitigate or manage any significant adverse effects. The EIA process is informed by consultation with statutory consultees, other interested bodies and members of the public. The purpose of identifying significant effects is to ensure decision makers are able to make an informed judgement on the environmental impacts of a proposal.
- 5.1.2 The key elements in EIA for a Nationally Significant Infrastructure Project (NSIP) are:
- Iterative project design, taking feedback from consultation and environmental studies and applying feedback to the design development process on an ongoing basis throughout the EIA;
 - Scoping and ongoing consultation, including consideration of responses and how these are addressed as part of the EIA;
 - Technical environmental impact assessments, including baseline studies, input to the design process, refinement of the design, and identification and reporting of residual environmental effects;
 - Consultation on the Preliminary Environmental Information (PEI) Report; and
 - Preparation and submission of the Environmental Statement (ES). Mitigation is identified to reduce or prevent likely significant adverse effects.

General Assessment Approach

- 5.1.3 Each of the technical assessments follows a systematic approach, with the principal steps being:
- Description of baseline conditions;
 - Identification of assessment approach and methodology;
 - Assessment of likely significant effects;
 - Identification of appropriate mitigation measures, including design changes;
 - Identification of residual (likely) environmental effects that remain following mitigation; and

- Assessment of cumulative effects when considering the Scheme along with other planned developments in the area.

General Assessment Approach

- 5.1.4 This ES has been prepared to satisfy the requirements of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as amended, (hereafter referred to as ‘the EIA Regulations’) (Ref 5-1).
- 5.1.5 In preparing this ES, reference has been made to the following guidance:
- Planning Inspectorate Advice Note 3: EIA Consultation and Notification (Ref 5-2);
 - Planning Inspectorate Advice Note 7: Environmental Impact Assessment: Process: Preliminary Environmental Information, Screening and Scoping (Ref 5-3);
 - Planning Inspectorate Advice Note 9: Rochdale Envelope (Ref 5-4);
 - Planning Inspectorate Advice Note 11: Working with Public Bodies in the Infrastructure Planning Process (Ref 5-5); and
 - Planning Inspectorate Advice Note 17: Cumulative Effects Assessment (Ref 5-6).

EIA Scoping

- 5.1.6 The aim of the scoping process is to identify key expected environmental issues at an early stage, to determine which elements of the Scheme are likely to result in likely significant effects on the environment and to establish the extent of survey and assessment requirements for the EIA.
- 5.1.7 The issues to be addressed within this ES were identified in the EIA Scoping Report (**ES Volume 3: Appendix 1-A [EN010131/APP/3.3]**) submitted to the Planning Inspectorate in November 2021. The Secretary of State’s (SoS) Scoping Opinion was received on 20 December 2021 (**ES Volume 3: Appendix 1-B [EN010131/APP/3.3]**), including the formal responses received by the Planning Inspectorate from consultees on the EIA Scoping Report.
- 5.1.8 Key issues raised in the Scoping Opinion are provided in **ES Volume 3: Appendix 1-C [EN010131/APP/3.3]**.
- 5.1.9 In response to the Scoping Opinion, the EIA presented in this ES include assessments for the following environmental topics:
- **Chapter 6:** Climate Change;
 - **Chapter 7:** Cultural Heritage;
 - **Chapter 8:** Ecology and Nature Conservation;
 - **Chapter 9:** Water Environment;
 - **Chapter 10:** Landscape and Visual Amenity;
 - **Chapter 11:** Noise and Vibration;

- **Chapter 12:** Socio-Economics and Land Use;
- **Chapter 13:** Transport and Access; and
- **Chapter 14:** Human Health and Wellbeing.

5.1.10 The EIA Scoping Report (**ES Volume 3: Appendix 1-A [EN010131/APP/3.3]**) concluded that several topics did not require a full chapter within the ES. These topics were not scoped out, rather they are addressed proportionately in relation to the likelihood for significant effects. These topics are described in:

- **Chapter 15: Other Environmental Topics [EN010131/APP/3.1]**
 - Air Quality;
 - Glint and Glare;
 - Ground Conditions;
 - Major Accidents and Disasters;
 - Telecommunications, Television Reception and Utilities; and
 - Waste.

5.1.11 Paragraph 5 of Schedule 4 of the EIA Regulations (Ref 5-1) requires a description of the likely significant transboundary effects to be provided in an ES. The Scoping Report concludes in Appendix A (Table A1) that the Scheme is not likely to have significant effects on the environment in an 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 any EEA States. Transboundary effects have therefore been scoped out from further assessment.

5.1.12 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.

Environmental Statement

5.1.13 This ES presents the outcomes of the following EIA activities:

- Establishing baseline conditions;
- Consultation with statutory and non-statutory consultees;
- Consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to the EIA;
- Consideration of technical standards for the development of significance criteria and specialist assessment methodologies;

- Review of secondary information, previous environmental studies, publicly available information and databases;
 - Desk-top studies and site survey;
 - Modelling and calculations.
 - Identification of effects, design review and design change to reduce environmental effects;
 - Reporting of effects following implementation of mitigation; and
 - Production of construction, operational and decommissioning phase framework plans to secure the proposed mitigation.
- 5.1.14 Each technical chapter follows the same structure for consistency and ease of reference, as outlined below:
- Introduction;
 - Consultation;
 - Legislation and Planning Policy;
 - Assessment Assumptions and Limitations;
 - Study Area;
 - Assessment Methodology;
 - Baseline Conditions;
 - Potential Impacts;
 - Embedded Mitigation Measures;
 - Assessment of Likely Impacts and Effects;
 - Enhancement Measures;
 - Residual Effects and Conclusions;
 - Cumulative Assessment; and
 - References.
- 5.1.15 A glossary and list of abbreviations are defined in the **Chapter 0: Contents, Glossary and Abbreviations** of the ES [EN010131/APP/3.1]

5.2 Rochdale Envelope

- 5.2.1 As discussed in **Chapter 2: The Scheme [EN010131/APP/3.1]**, a Rochdale Envelope approach has been adopted to provide flexibility in the ES and the Development Consent Order (DCO).
- 5.2.2 In order to establish parameters within the Rochdale Envelope for assessment, a set of “**Outline Design Principles**” have been established [EN010131/APP/2.3]. The Outline Design Principles form the Rochdale Envelope limits within which the Scheme can be built and operated. These Outline Design Principles correspond to the physical areas set out in the **Works Plans [EN010131/APP/5.2]**.

- 5.2.3 The Outline Design Principles allow for an element flexibility in the Scheme design until detailed design work can be carried out post-consent. In addition, a Site Layout Plan (**ES Volume 2: Figure 2-4 [EN010131/APP/3.2]**) has been created to provide a visual representation of a tangible example of a scheme that could be constructed within the Outline Design Principles. The Site Layout Plan enables a robust assessment of likely significant effects to be undertaken within this ES, for topics where the nature of the assessment methodology requires a specific level of detail, including for example the landscape and visual, cultural heritage, ecology, water environment and noise assessments.
- 5.2.4 It is also important to recognise that in some cases the Site Layout Plan includes 'indicative' design details, rather than maximum parameters. For example, the number of PV Panels in the Site Layout Plan is an indicative number rather than a maximum number, as the maximum Outline Design Principle relates to the total surface area of all the PV Panels rather than the total number of PV Panels. This is appropriate because the surface area of an individual PV Panel and number of them does not have the potential to change the likely significant effects of the Scheme, whereas the maximum total surface area of all PV Panels does.
- 5.2.5 Over time, as technology advances, it is possible that PV Panels could change in size, meaning that more or less are required to cover the same area (as limited by the **Outline Design Principles EN010131/APP/2.3]** and **Works Plans [EN010131/APP/5.2]**). As a result, it is the total surface area of PV Panels that is relevant to the technical assessments and not the number of PV Panels needed to achieve that, hence it is the total surface area of PV Panels that is the relevant parameter (the Outline Design Principle).
- 5.2.6 Whilst the design presented in the Site Layout Plan is indicative, all topic chapters have assessed the likely significant effects arising from the worse-case parameter within the Outline Design Principles.
- 5.2.7 The approach taken to the assessment in each technical chapter is explained in the relevant chapter.

5.3 Spatial Scope

- 5.3.1 The topic chapters of this ES (**Chapters 6 to 15 [EN010131/APP/3.1]**) describe the spatial scope, including the rationale for determining the specific area within which the assessment is focussed. The study areas are a function of the nature of the impacts and the locations of potentially affected environmental resources or receptors. Justification for the spatial scope considered appropriate is documented in each topic chapter (**Chapters 6 to 15 [EN010131/APP/3.1]**).

5.4 Determining the Baseline Conditions

- 5.4.1 In order to predict the potential environmental effects of the Scheme, it is important to determine the baseline environmental conditions that currently exist within the Site and surrounding area, in the absence of any development.
- 5.4.2 Detailed environmental baseline information has been collected and the methodology for the collection process is detailed within each technical

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

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

5.4.3 Consideration is also given to how the baseline conditions would evolve in the absence of the Scheme, known as the 'future baseline', in respect of both natural changes and any planned developments.

5.4.4 The baseline environment are the conditions against which the potential impacts from the construction, operational, and decommissioning activities of the Scheme are assessed.

5.5 Design Development, Impact Avoidance and Mitigation

5.5.1 The design process for the Scheme has been heavily influenced by the findings of early environmental appraisals and the EIA process. The Scheme has had several measures incorporated into the design to avoid or minimise environmental impacts.

5.5.2 The key aspects where the design has evolved are described in **Chapter 3: Alternatives and Design Evolution [EN010131/APP/3.1]**. These include measures required for legal compliance, as well as measures that implement the requirements of good practice guidance documents. The assessment has been undertaken on the basis that these measures are incorporated in the design and construction practices (i.e. they are 'embedded mitigation'). Embedded mitigation measures for the construction phase are set out in the **Framework Construction Environmental Management Plan (CEMP) ([EN010131/APP/7.3])**.

5.5.3 Implementation of embedded mitigation relied upon in the assessment will be secured in the DCO, including by ensuring the works described in Schedule 1 of the DCO are restricted to their corresponding works areas shown on the **Works Plans [EN010131/APP/5.2]**, DCO requirements requiring compliance of detailed design of the Scheme with the Outline Design Principles, or through DCO requirements requiring compliance with a management strategy, plan, or requirement document.

5.5.4 Consideration has been given to any 'additional mitigation' over and above the embedded mitigation that may be required and has the potential to mitigate any significant adverse effects identified following the assessment of the Scheme inclusive of its embedded mitigation. Where significant effects remain following the implementation of embedded mitigation and achievable further measures could lower the identified effect, the topic chapter identifies additional mitigation and explains how the additional mitigation is secured, for example via a specific DCO requirement or via a management plan, or document secured by a DCO requirement.

- 5.5.5 The residual effects (after the implementation of embedded and additional mitigation) have then been identified and are presented in each topic chapter. Significant residual effects for all topics are summarised in **Chapter 17: Summary of Significant Environmental Effects** of the ES [EN010131/APP/3.1].
- 5.5.6 Where relevant, a number of topics identify enhancement measures. Enhancement measures are not required to mitigate significant effects of the Scheme and are not factored into the determination of residual effects. They are further measures which would have additional beneficial outcomes should they be implemented.

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 may result from preparation works, construction, and commissioning activities. This covers effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, risk of fuel / oil spillage, and the visual intrusion of plant and machinery on site. Some aspects of construction-related effects will last for longer than others. For example, impacts related to earth moving are likely to be relatively short in duration compared with the construction of energy infrastructure and landscaping activities, which are likely to continue throughout the entire construction period.

Operational Phase Effects

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

Decommissioning Phase Effects

- 5.6.3 Decommissioning effects are changes resulting from activities beginning and ending during the decommissioning stage. This covers effects related to decommissioning site traffic, noise and vibration from decommissioning activities, dust generation, site runoff, mud on roads, risk of fuel / oil spillage, and the visual intrusion of plant and machinery on site, for example. Typically, decommissioning phase effects are similar in nature to the construction phase, although may be of shorter duration and of lower intensity.
- 5.6.4 Decommissioning phase effects are set out and assessed separately to construction and operation phase effects in each of the technical chapters. In some cases, given the inherent uncertainty on the scope of decommissioning activities and the relevant environmental conditions prevalent at the time, the technical chapter will provide a concise assessment explaining that the effects during decommissioning are expected to be less than or the same as those predicted during construction which is considered to be a conservative and suitably precautionary assumption.

Assessment Years

- 5.6.5 The assessment considers the environmental impacts of the Scheme at key stages in its construction and operation and, as far as practicable, its decommissioning.
- 5.6.6 The 'existing baseline' date is 2021/2022 as this is the period in which the baseline studies for the EIA has been undertaken. As described above, 'future baseline' conditions are also predicted for each assessment scenario, whereby the conditions anticipated to prevail at a certain point in the future (assuming the Scheme does not progress) are identified for comparison with the predicted conditions with the Scheme. 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.
- 5.6.7 The assessment scenarios that are being considered for the purposes of the EIA (and considered in this ES) are as follows:
- Existing Baseline (2021/2022) – this is the principal baseline against which environmental effects are assessed;
 - Future Baseline (No Development) in 2025-2027, 2043 (for landscape and visual only) and 2088 (to assess construction, operation, and decommissioning impacts against), against which the environmental effects of the Scheme are assessed. These assessment years are explained below. The future baseline is defined within the technical chapters.
 - Construction (2025 – 2027-28) (With Development): The peak construction years for the purpose of the EIA is anticipated to be 2026; this assumes commencement of construction in Q1 2025 and that the Scheme is built out over a 24 – 36 month period. The 24-month construction period 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 of 36 months would likely result in lower traffic, air quality and noise impacts; therefore, the likely worst-case scenario has been defined and assessed within each technical chapter.
 - Operation (2028) (With Development). This is the opening year of the Scheme; it is assumed that the Scheme will be operational in Q1 2028.
 - Decommissioning (2088 to 2089-90) – The design life of the Scheme is expected to be at least 60 years although this may be extended if the Scheme is still operating efficiently after the 60-year period. Decommissioning is expected to take between 24 and 48 months.
- 5.6.8 A future year of 2043 (i.e. 15 years post opening of the Scheme) will also be considered for specific topics including landscape and visual amenity, in terms of the maturation of vegetation (i.e. 15 years after the operational assessment year to allow the consideration of mitigation planting).

5.7 Effect Significance Criteria

5.7.1 The significance of residual effects is determined by reference to criteria for each assessment topic. Specific significance criteria for each technical discipline has been developed, giving due regard to the following as relevant:

- Sensitivity or value of the receptor or resource (described as high, medium, low, and very low);
- Extent and magnitude of the impact (described as high, medium, low and very low);
- Effect duration (see Section 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; and
- Compatibility with environmental policies.

5.7.2 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.

5.7.3 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 ES to define residual effects:

- **Adverse** – detrimental or negative effects to an environmental / socio-economic resource or receptor; or
- **Negligible** (also referred to as ‘neutral’ for some topics) – imperceptible effects to an environmental / socio-economic resource or receptor; or
- **Beneficial** – advantageous or positive effects to an environmental / socio-economic resource or receptor.

5.7.4 Where adverse or beneficial effects are identified, these are assessed against the following scale:

- **Minor** – slight, very short or highly localised effect of no significant consequence;
- **Moderate** – noticeable effect (by extent, duration or magnitude) which may be considered significant; and

- **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.

5.7.5 Each of the technical chapters 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.

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

Table 5-1: Example matrix to classify environmental effects

Sensitivity or value of resource /	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

5.7.7 Moderate and major effects are generally considered to be ‘significant’ for the purposes of the EIA Regulations, in accordance with standard EIA practice, as shown by the shaded cells in Table 5-1 above.

5.7.8 Each of the technical chapters provides further description and definition of the assessment criteria relevant to each topic. Where possible, this has been based upon quantitative and accepted criteria (for example British Standards), together with the use of value judgment and expert interpretation to classify effects.

5.7.9 In general, the classification of an effect is based on the magnitude of the impact and sensitivity or importance of the receptor, using the matrix shown in Table 5-1 above. Where there are deviations away from this matrix (due to the technical guidance for a specific assessment topic), this is highlighted within the relevant technical chapter and the reason for the variation explained. Generic definitions for the classification of effects are shown in Table 5-2.

Table 5-2: Generic effect 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.

Effect	Generic description
Moderate	These effects, if adverse, are likely to be important at a local scale and on their own could have a material influence on decision making.
Minor	These effects may be raised as local issues and may be of relevance in the detailed design of the project 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.

- 5.7.10 Section 5.5 of this chapter sets out how mitigation measures have been incorporated into the Scheme and how these are secured. For any significant adverse effects identified, consideration has been given to what additional mitigation would be feasible in order to try and avoid or minimise the effect.
- 5.7.11 The topic chapters in this ES identify the ‘residual’ effects, which are the effects which remain following the implementation of embedded and additional mitigation measures and classify these in accordance with the effect classification terminology given above.
- 5.7.12 A number of technical disciplines may utilise different criteria when undertaking assessments due to differences in industry guidelines. Where this is the case, the technical topic will discuss how the assessment methodology or classification of effects differs for the general EIA methodology as described in this section and provide justification.

Assessment of Construction and Decommissioning Effects

- 5.7.13 The assessment of construction and decommissioning effects has been undertaken based on existing knowledge, techniques and equipment. A ‘reasonable worst-case’ scenario is used with respect to the envisaged construction methods, location (proximity to sensitive receptors), phasing and timing of construction activities.
- 5.7.14 Construction and decommissioning assumptions, including what has been assumed in terms of good practice measures are set out within the technical chapters and the **Framework CEMP [EN010131/APP/7.3]** and **Decommissioning Environmental Management Plan (DEMP) [EN010131/APP/7.5]** (as relevant to each phase). Each technical topic chapter of the ES 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 EIA Regulations, ‘cumulative effects’ have been considered. These are effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together (i.e. cumulatively) with the Scheme.
- 5.8.2 For the cumulative impact assessment, two types of impact are considered:

- The combined effect of individual impacts from the Scheme, for example noise or pollutants on a single receptor (these are referred to as ‘effect interactions’); and
- The combined effects of other development scheme(s) which may interact cumulatively with the Scheme and result in different likely significant effect (these are referred to as ‘cumulative effects’).

Effect Interactions

- 5.8.3 There is no established EIA methodology for assessing and quantifying effect interactions that lead to combined effects on sensitive receptors, however 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 5-7).
- 5.8.4 AECOM has reviewed these guidelines and has developed an approach which uses the defined residual effects of the Scheme to determine the potential for effect interactions that lead to combined effects.
- 5.8.5 The EIA predicts beneficial and adverse effects during construction, operation and decommissioning of the Scheme, which are classified as minor, moderate or major. Several effects on one receptor or receptor group could theoretically interact or combine to produce a combined significant overall effect.
- 5.8.6 An exercise which tabulates the effects on receptors or receptor groups has been undertaken to determine the potential for effect interactions and therefore any combined effects (**Chapter 16: Cumulative Effects and Interactions [EN010131/APP/3.1]**). Only adverse or beneficial residual effects classified as minor, moderate, or major have been considered in relation to potential effect interactions. Residual effects classified as negligible are excluded from the assessment of the effect interactions as, by virtue of their definition (see Table 5-2), they are considered to be imperceptible effects on an environmental / socio-economic resource or receptor which would not have the potential to lead to effect interactions.

Cumulative Effects with Other Developments

- 5.8.7 The Planning Inspectorate’s Advice Note 17 on the assessment of cumulative effects (Ref 5-6) 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 National Significant Infrastructure Project’s Zone of Influence and identify long list of ‘other developments’

- 5.8.8 A review of other developments has been undertaken, initially encompassing a ‘Zone Of Influence (ZOI)’ defined by the environmental topic specialists to prepare a long list of ‘other developments’. The long list includes all identified EIA and NSIP developments, large scale major developments, and key Local Development Plan allocations within 10km of the Site. 10km is considered the maximum ZOI.

- 5.8.9 The list of ‘other developments’ included in the assessment of cumulative effects were reviewed and developed in consultation with the local planning authorities, statutory consultees, and other relevant organisations.
- 5.8.10 Developments included in the initial long-list were based on the following criteria determined by AECOM and agreed with the councils. The criteria has been developed having regard to Advice Note 17 and utilising experience of assessing cumulative effects for schemes of a similar nature and scale to the Scheme:
- a) Development currently under construction that meets one of (d) to (i);
 - b) 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), and meets one of (d) to (i);
 - c) Submitted applications not yet determined meeting one of (d) to (i);
 - d) On the National Infrastructure Planning Programme of Projects and within 10km of the Site;
 - e) Applications for EIA development and within 10km of the Site;
 - f) Development identified in the relevant Development Plan such as Allocated Sites, within 10km;
 - g) Any sites that have been registered or achieved a positive EIA screening opinion, which are within 10km of the Site;
 - h) Other applications for solar development, excluding householder or small-scale roof mounted solar developments, within 10km of the Site; and
 - i) Other schemes that do not meet the above criteria but which a statutory stakeholder specifically requests to be included.
- 5.8.11 The long list has taken account of the criteria in the Planning Inspectorate’s Advice Note 17 (Ref 5-6).

Stage 2 – Identify shortlist of ‘other developments’ for Cumulative Effects Assessment

- 5.8.12 At Stage 2, any developments of a nature or scale without the potential to result in likely significant cumulative effects were excluded, following discussion with the local planning authorities and consideration of the likely Zol for each environmental topic. The long list of Cumulative Schemes has informed the short list presented within each technical chapter of this ES, which for each technical discipline is topic specific, and based on their own methodology and justification.
- 5.8.13 A shortlist of cumulative developments is presented in **ES Volume 3: Appendix 16-A [EN010131/APP/3.3]** of this ES. This has been based on:
- a. The scale of the other developments;
 - b. The developments that fall within the Zol of specialists topics; and

c. If there is the potential for any temporal overlap between the Scheme and other developments.

Stage 3 – Information gathering

5.8.14 Information relating to other developments, has been collected from the appropriate sources (which may include the local planning authorities, the Planning Inspectorate or directly from the applicant / developer) and include, but are not limited to:

- a) Proposed design and location information;
- b) Proposed programme of construction, operation and / or decommissioning; and
- c) Environmental assessments that set out baseline data and effects arising from ‘other developments’.

Stage 4 – assessment

5.8.15 The full assessment of cumulative effects is contained within the topic Chapters and a summary is presented in **Chapter 16: Cumulative Effects and Interactions [EN010131/APP/3.1]**. The Chapter includes a list of developments considered to have the potential to generate a cumulative effect together with the Scheme, documented in a matrix which includes the following:

- a) A description of the development;
- b) An assessment of the cumulative effect with the Scheme;
- c) Proposed mitigation applicable to the Scheme necessary to minimise a potential cumulative effect; and
- d) The likely residual cumulative effect.

5.8.16 The criteria for determining the significance of any cumulative effect are based upon the criteria presented in Section 5.7, which takes into account:

- 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.

5.8.17 Negligible effects from the Scheme are not considered in the cumulative assessment; it is not expected that these effects, which are generally miniscule or imperceptible by nature, would contribute to and elevate the effects associated with other developments. Where there are minor, moderate, or major effects associated with the Scheme and there exists the potential for these to be affected by impacts from other developments, a statement is made in the relevant technical chapter on whether the cumulative effect is different to the residual effect associated with the Scheme.

5.8.18 Where the cumulative effect differs to the residual effect, the chapter clarifies whether the cumulative effect is anticipated to be significant or not significant.

Shared Grid Connection Corridor

5.8.19 The Grid Connection Corridor has the potential to be shared with Cottam and West Burton solar projects as detailed in **ES Volume 1, Chapter 2: The Scheme [EN010118/APP/3.1]**. To better understand the effects associated with the Grid Connection Corridor for this Scheme, and cumulatively with Cottam and West Burton solar projects, this ES considers the following two Scenarios:

- Scenario 1: All three projects' ducts and cables are installed within a construction programme of 24-36 months. It is assumed all the ducts will be installed at once and launch and reception pits and trenches will be backfilled so the area can then be re-instated. The sequence and schedule for each project is not confirmed, therefore, as a worst case, three lots of separate cable-pulling activities are assumed. The access points, haul routes and compounds will remain in place for 24-36 months to enable the cable pulls.
- Scenario 2: The sequential installation of all three projects' ducts and cables over a maximum 5-year period. The access points, haul routes and compounds would remain in place for up to 5 years.

Worst Case Scenario

5.8.20 The ES assesses the worst-case scenario, which will vary depending on the discipline. Each discipline defines the worst-case scenario for their respective chapter and assesses it. The location and construction assumptions for the Shared Grid Connection Corridor are provided within the Construction Method Statement provided within **ES Volume 3: Appendix 2-B [EN010118/APP/3.3]** with a summary of key assumptions provided below.

Table 5-3: Cumulative Scenario Assumptions

	The Scheme	Cottam and West Burton solar projects	Cumulative Scenario 1	Cumulative Scenario 2
Maximum construction duration	36 months	36 months*	26-36 months	5 years
Maximum Construction Working Width	25m	60m	100m	100m
Number of Launch and Reception Pits	40 each with a maximum working area of 25m x 20m	40 each with a maximum working area of 60m x 40m	40 each with a maximum area of 60m x 40m	40 each with a maximum area of 60m x 40m

*Cottam and West Burton solar projects Assumption

5.8.21 The shared Grid Connection Corridor and the location of Cottam and West Burton solar projects are shown in **ES Volume 2: Figure 5-1 [EN010118/APP/3.2]**.

Potential Effects

- 5.8.22 Each technical chapter has undertaken a cumulative assessment of potential effects attributed to the Shared Grid Connection Corridor, for both Scenarios 1 and 2. Potential effects are summarised in **Chapter 16: Cumulative Effects and Interactions [EN010131/APP/3.1]**, in addition to other cumulative schemes.

Shared Mitigation

- 5.8.23 Where possible, shared Gate Burton Energy Park and Cottam and West Burton solar projects mitigation is identified. Where applicable, this is presented within the Cumulative section of each technical chapter.

5.9 References

- Ref 5-1 The Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2017).
- Ref 5-2 Planning Inspectorate (2018) Advice Note 3: EIA Notification and Consultation.
- Ref 5-3 Planning Inspectorate (2020) Advice Note 7: EIA: Process, Preliminary Environmental Information, Screening and Scoping.
- Ref 5-4 Planning Inspectorate (2018); Advice Note 9: Using the Rochdale Envelope.
- Ref 5-5 Planning Inspectorate (2017); Advice Note 11: Working with Public Bodies in the Infrastructure Planning Process.
- Ref 5-6 Planning Inspectorate (2019); Advice Note 17: Cumulative Effects Assessment. Cumulative effects assessment relevant to nationally significant infrastructure projects.
- Ref 5-7 European Commission (1999) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.