



Tween Bridge Solar Farm

A Nationally Significant Infrastructure Project in the Energy Sector

Preliminary Environmental Information Report

Chapter 3 – Approach to Environmental Impact Assessment

March 2025



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3. Approach to Environmental Impact Assessment

3.1. Introduction

3.1.1. This chapter of the Preliminary Environmental Information Report (PEIR) sets out the approach taken to the Environmental Impact Assessment (EIA) process to date. It provides details of the information gathered to date and the assessment work undertaken at this stage. It explains the methodology used to prepare the technical chapters of this PEIR and describes its structure and content. In particular, it sets out the process of identifying and assessing the likely significant environmental effects of the Scheme.

3.1.2. This chapter is supported by: -

- **Appendix 3.1 – Cumulative Long List of Sites**
- **Figure 3.1 – Cumulative Long List Radius**

3.2. Scope of Environmental Impact Assessment

Methodology

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

3.2.2. On the 31 January 2023, the applicant requested a Scoping Opinion from the Planning Inspectorate. The request was accompanied by the Applicant's Scoping Report which described the proposed scope and methodology for the technical studies being undertaken to provide an assessment of any likely significant effects and, where necessary, to determine suitable mitigation measures for the construction and operational and decommissioning phases of the Scheme. It also described those topics or sub-topics which are proposed to be scoped out of the EIA process and provided justification as to why the scheme would not have the potential to give rise to significant environmental effects in these areas (see Appendix 1.1- Tween Bridge Solar Scoping Report).

3.2.3. Following consultation with the statutory bodies, the Planning Inspectorate (on behalf of the Secretary of State) adopted its Scoping Opinion on the 13 March 2023 (see Appendix 1.2- Scoping Opinion). The key issues raised are summarised at the start of each technical chapter of the PEIR. The EIA Scoping Opinion identified assessments that could be scoped out of the PEIR and subsequent ES together with topics that do not require a full chapter within the PEIR or subsequent ES, either due to the brevity of the assessment or the small impact associated with the Scheme. These are identified in Table 3.1 and this position will be kept under review for the Environmental Statement. A working draft of the PEIR was issued to consultees as part of the informal consultation. This PEIR takes into account the comments made by consultees during the informal consultation and these are discussed within the technical chapters.

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Table 3.1 Environmental themes either scoped out of the ES or not requiring a full chapter.

Environmental Topic	How/ Where Addressed / Reason for Scoping in or Out
Major Accidents and Disasters (Accidents and Emergencies)	The nature, scale and location of the Scheme is not considered to be vulnerable to or give rise to significant impacts in relation to the Risk of Accidents and Major Disasters ¹ . Potential effects relating to soil conditions, surface water flooding and climate change are all considered in other EIA topics. The applicant's Scoping Report proposed how this environmental topic would be proportionately assessed within ES Chapter 16 ('Other Environmental Topics') rather than a standalone ES Chapters. The Scoping Opinion confirmed that this approach was acceptable.
Climate Change and Climatic Factors	The applicant's Scoping Report proposed how climate change will be assessed within ES Chapter 16 ('Other Environmental Topics') and that climatic factors will be assessed "...within the relevant technical assessments such as flood risk", rather than in standalone ES Chapters. The Scoping Opinion confirmed that this approach was acceptable.
Human Health	Table 3.4 of the applicant's Scoping Report proposes that impacts on human health will be proportionately considered within relevant ES aspect chapters, such as Air Quality and Noise, rather than in a standalone ES chapter. The Scoping Opinion was content with this approach, with EIA Methodology ES chapter should provide clear cross-referencing to where the relevant impacts on human health are considered.
Waste	The Scoping Report proposes that impacts associated with waste will be assessed within ES Chapter 16 ('Other Environmental Topics'), rather than in a standalone ES Chapter. The Inspectorate has considered the nature and characteristics of the scheme and is content with this approach.
Impacts associated with waste during operational phase	The scoping opinion advised how <i>"Having regard to the nature and characteristics of the Proposed Development, the Inspectorate is content that impacts associated with waste produced during the operational phase are not likely to result in significant effects. This matter can be scoped out of the ES"</i> .

¹ No definition of 'major accidents and disasters' is provided in the EIA Regulations, however the IEMA Quality Mark Article on 'Assessing Risks of Major Accidents / Disasters in EIA' produced by WSP in 2016 provides the following definition "man-made and natural risks which are considered to be likely, and are anticipated to result in substantial harm that the normal functioning of the project is unable to cope with/rectify i.e. a significant effect."

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<p>Detailed assessment of ecological features that are not considered 'important' – all phases</p>	<p>The Applicant's Scoping Report proposes that the ES will only contain a detailed assessment of impacts on 'important' ecological features (as per the CIEEM Guidelines). Identification of important ecological features and those features that can be scoped into or out of the detailed assessment are currently being discussed with Natural England and the relevant LPAs. Table 7.8 of Chapter 7 of the PEIR presents the evaluation of identified ecological features and provides the rationale as to why individual features have been included or 'scoped out' of the detailed assessment. The Applicant would seek to set out the position reached within a draft Statement of Common Ground, to be prepared to accompany the application submission.</p>
<p>Indirect impacts on statutory designated sites (without mobile qualifying features) located over 2km from the site – all phases</p>	<p>The Scoping Opinion was content that this matter can be scoped out for the operational phase of the development. The final ES will however assess any likely significant effects on statutory designated sites including those located over 2km from the site resulting from hydrological changes and water quality impacts, during construction and decommissioning.</p>
<p>Road traffic and GHG emissions – decommissioning</p>	<p>The Scoping Report proposes to scope out an assessment of air quality impacts related to the decommissioning of the Scheme on the basis that road traffic and GHG emissions at the time of decommissioning are expected to be zero. The Scoping Opinion agreed that these matters can be scoped out of Chapter 14 Air Quality.</p>
<p>Road traffic and GHG emissions – operation</p>	<p>The Scoping Report proposes to scope out these matters on the basis that traffic movements during operation are expected to be minimal. The Scoping Opinion confirmed that these matters can be scoped out.</p>
<p>Detailed assessment of construction traffic impacts on ecological sites</p>	<p>The Scoping Opinion agreed that on the basis that the Decision Making Thresholds set out by the Joint Nature Conservation Committee are not exceeded and that the roads affected by the Scheme are more than 200m from any designated site, the Inspectorate agrees that a detailed assessment of construction traffic impacts on ecological sites can be scoped out.</p>
<p>Glint & Glare</p>	<p>The Scoping Opinion is content that a standalone ES Chapter for Glint and Glare is not required. A Glint and Glare Assessment would instead be presented as a standalone report submitted as a technical appendix to ES Chapter 2 (Development Description). The final ES will contain a summary of the assessment in the technical appendix and identify any significant effects resulting from glint and glare.</p>

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Transboundary Effects

- 3.2.4. The EIA Regulations require consideration of transboundary effects of development on the environment. Transboundary effects are the effects of a project on the environment of another European Economic Area (EEA) member state.
- 3.2.5. The Scoping Opinion adopted by the Planning Inspectorate on behalf the SoS considered that the scheme is unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State. The Inspectorate considered that the likelihood of transboundary effects resulting from the scheme is so low that it does not warrant the issue of a detailed transboundary screening².

3.3. General Assessment Approach

- 3.3.1. The PEIR has been prepared having regard to the information that will need to be provided in the subsequent ES to satisfy the requirements of the EIA Regulations.
- 3.3.2. The contents of the PEIR has been based upon: –
 - The current Draft Order Limits and scheme description
 - Review of the baseline situation through existing information, including data, reports, site surveys and desktop studies available at the time of publishing this PEIR
 - Site surveys and desktop studies undertaken to date
 - Consideration of the relevant National Policy Statement (NPSs)³, National Planning Policy Framework (NPPF), Planning Inspectorate Technical Advice Notes⁴ and accompanying National Planning Practice Guidance (NPPG), and the statutory extant and emerging development plan policies
 - Consideration of potential sensitive receptors
 - Identification of likely significant environmental effects and an evaluation of their duration and magnitude
 - Expert opinion and knowledge
 - Modelling and calculations
 - Use of relevant technical and good practice guidance
 - Specific consultations with appropriate bodies

² Tween Bridge Scoping Opinion, Page 8

³ In particular NPS EN-1, NPS EN-3 and EN-5

⁴ In particular Advice Note 3, 7, 9, 11 and 17.

- 3.3.3. Each topic chapter defines the scope of the assessment within the methodology section, together with details of the study area, desk study and survey work undertaken. Each environmental topic has been considered by a specialist in that area.
- 3.3.4. Environmental effects have been evaluated with reference to definitive standards and legislation where available. Where it has not been possible to quantify effects, assessments have been based on available knowledge and professional judgment. Within each of the technical chapters of the PEIR, the information which will inform the EIA process will generally follow the structure below:
- Introduction – to introduce the topic under consideration, state the purpose of undertaking the assessment and set out those aspects of the scheme material to the topic assessment, and provide a summary of the relevant consultation responses;
 - Assessment Approach – to describe the method and scope of the assessment undertaken and responses to consultation in relation to method and scope in each case pertinent to the topic under consideration;
 - Baseline Conditions – a description of the baseline conditions pertinent to the topic under consideration including baseline survey information. Future baseline scenario will also be assessed in the subsequent ES and this may include the baseline whereby the Tween Bridge Wind Farm is decommissioned during the operational lifetime of the Scheme;
 - Assessment of Likely Significant Effects – identifying the likely effects, evaluation of those effects and assessment of their significance, considering construction, operational (including maintenance) and decommissioning and direct and indirect effects;
 - Mitigation and Enhancement – describing the mitigation strategies for the significant effects identified and noting any residual effects of the proposals and their significance;
 - Cumulative and In-combination Effects – consideration of potential cumulative and in-combination effects with those of other developments; and
 - Summary – a non-technical summary of the chapter, including baseline conditions, likely significant effects, mitigation and conclusion.
- 3.3.5. With regards to the export cable to the National Grid substation, the layout plan provides an illustrative corridor for the underground export cable route, and this is based upon the Applicant's current assumptions as to the possible location for the National Grid substation within the National Grid Substation and RWE Underground Export Cable Route Assessment Area. The illustrative corridor is based on the guiding principles to select the shortest route (hence reduce environmental impacts by minimising development footprint; and avoid key sensitive features wherever possible, and where not, seek appropriate mitigation measures. As an indicator of the likely significant effects, the assessment focuses on the illustrative export cable corridor and provides a strategic assessment of the overall export cable route assessment area.

3.4. Determining Significance

- 3.4.1. The purpose of the PEIR is to identify the likely 'significance' of environmental effects (beneficial or adverse) arising from a proposed development. In broad terms, environmental effects are described as:

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- Adverse – detrimental or negative effects to an environmental resource or receptor;
 - Beneficial – advantageous or positive effect to an environmental resource or receptor; or
 - Negligible – a neutral effect to an environmental resource or receptor.
- 3.4.2. Effects will be considered against three phases of the development; the construction phase, operational phase and decommissioning phase.
- 3.4.3. The construction phase effects are those effects that result from activities during enabling works, construction, and commissioning activities. This covers sources of effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, risk of fuel/oil spillage, and the visual intrusion of plant and machinery on site. Some aspects of construction related effects will last for longer than others. For example, impacts related to earth moving are likely to be relatively short in duration compared with the construction of energy infrastructure and landscaping activities, which are likely to persist throughout the entire construction period.
- 3.4.4. 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 energy infrastructure, and its operation, use and maintenance. Timescales associated with these enduring effects are as follows:
- Short term – a period of months, up to one year
 - Medium term – a period of more than one year, up to five years, and
 - Long term – a period of greater than five years. As the Scheme is temporary, consideration and distinction will be given to long term effects that are reversable (e.g. those that could end on decommissioning and those that may be permanent (e.g. those that could not be reversed following decommissioning)).
- 3.4.5. Decommissioning effects are changes resulting from activities beginning and ending during the decommissioning stage. This covers sources of effects such as decommissioning site traffic, recycling of solar PV panels, 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 slightly less intensity.
- 3.4.6. It is proposed that the significance of environmental effects (adverse, negligible/ neutral or beneficial) would be described in accordance with the following 7-point scale:-

Table 3.2 Definition of Impact of Significance

Impact Significance	Definition
Major Adverse	Very large or large change in receptor condition, which are likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or, could result in exceedance of statutory objectives and/or breaches of legislation
Moderate adverse	Intermediate change in receptor condition, which are likely to be important considerations at a local level
Minor adverse	Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision-making process.
Negligible	No discernible change in receptor condition.
Minor beneficial	This impact is of minor significance but has been assessed as having some environmental benefit.
Moderate beneficial	This impact is assessed as providing a moderate gain to the environment
Major beneficial	This impact is assessed as providing a significant positive gain to the environment

3.4.7. Significance reflects the relationship between two factors:

- The magnitude or severity of an effect (i.e., the actual change taking place to the environment); and
- The sensitivity, importance or value of the resource or receptor.

3.4.8. The broad criteria for determining magnitude are set out in Table 3.3. It is worth noting that the degrees of magnitude defined in the table below can be both positive and negative, as a development can result in a positive effect on the environment.

Table 3.3 Degrees of Magnitude and their Criteria

Magnitude of Effect	Criteria
High	Total loss or major/substantial alteration to elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed.
Medium	Loss or alteration to one or more elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed.
Low	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but the underlying character/composition/attributes of the baseline condition will be similar to the pre-development.
Negligible	Very little change from baseline conditions. Change not material, barely distinguishable or indistinguishable, approximating to a 'no change' situation.

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- 3.4.9. The sensitivity of a receptor is based on the relative importance of the receptor using the scale in Table 3.4.

Table 3.4: Degrees of Sensitivity and their Criteria

Magnitude of Effect	Criteria
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance.
Medium	The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high and more than local (but not national or international) importance.
Low	The receptor/resource is tolerant of change without detrimental effect, is of low or local importance.
Negligible	The receptor/resource can accommodate change without material effect, is of limited importance

- 3.4.10. Placement within the 7-point significance scale would be derived from the interaction of the receptor's sensitivity and the magnitude of change likely to be experienced (as above), assigned in accordance with Table 3.5 below, whereby effects assigned a rating of Major or Moderate would be considered as 'significant'. It is noted that not all environmental factors use the matrix based approach but instead use numerical values (such as noise impacts). The approach towards numerical values would be detailed within the relevant individual technical chapter.

Table 3.5: Levels of Effect Degrees of Significance

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

- 3.4.11. The above magnitude and significance criteria are provided as a guide for specialists to categorise the significance of effects within the PEIR. Where discipline-specific methodology has been applied that differs from the generic criteria above, this will be clearly explained within the given technical chapter.

- 3.4.12. The shaded cells in table 3.5 denotes where the environmental effect is assessed as having a major or moderate degree of significance it is deemed to be “significant”. When such a significant effect occurs consideration of mitigation solutions or enhancements to minimise the effect (which can include design alterations) will be considered.
- 3.4.13. It should be noted at this point that mitigation can come in the form of embedded design through design alteration to resolve a significant effect and mitigation through additional measures. Once these mitigations and enhancements have been assessed the degree of significance may decrease to minor/moderate, minor or negligible. If such a level of environmental effect occurs the Scheme is no longer considered as creating a “significant effect”. If an environmental effect remains “significant” (i.e. major/moderate) the determining authority must weigh up the planning balance and determine if this significant, negative/positive environmental effect is outweighed by some other planning gain in determining the application.
- 3.4.14. A level of effects would be assigned both before and after mitigation. This will include both embedded design mitigation, such as the Construction Environmental Management Plan (CEMP), and any additional mitigation ‘additional mitigation’ over and above the embedded mitigation that may be required to mitigate any significant adverse effects identified following the assessment of the Scheme inclusive of its embedded mitigation.

3.5. Addressing Uncertainty in Assessment

- 3.5.1. There is always some degree of inherent uncertainty within the EIA process, in relation to factors such as future improvements to construction and design, the potential effects of climate change on existing receptors and in terms of the margin of error within forecasting or modelling tools. As the EIA process progresses, the degree of uncertainty is anticipated to reduce. Any uncertainty at this stage of the project has been set out within the relevant chapters of the PEIR.
- 3.5.2. The assessment of construction and decommissioning effects will be undertaken based on existing knowledge, techniques and equipment. A ‘reasonable worst-case’ scenario will be used with respect to the envisaged construction methods, location (proximity to sensitive receptors), phasing and timing of construction activities.
- 3.5.3. Where modelling tools have been used within the topic assessments, care has been taken to ensure that the tool selected is appropriate for the assessment, taking into account topic-specific good practice and guidance. Calibration has been used to ensure a reasonable degree of accuracy in measurements. Topic chapters within the PEIR set out measures taken to address any uncertainty with regard to modelling inputs and outputs and any assumptions made.

3.6. Mitigation

- 3.6.1. The EIA Regulations (Regulation 14(2)(c) and paragraph 7, Schedule 4) require that where significant effects are identified ***‘a description of any feature of the Project, or measures envisaged in order to avoid, prevent or reduce or, if possible, offset any likely significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements’*** should be provided. The development of mitigation measures is part of the iterative EIA process. Where the assessment of the scheme has identified potential for significant adverse environmental effects, the scope for mitigation of those effects has been considered and is outlined in the appropriate technical chapter. It is assumed that such measures would be secured by appropriate Development Consent Order (DCO) requirements.

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3.6.2. Where the effectiveness of the mitigation proposed has been considered uncertain, or where it depends upon assumptions of operating procedures, then data and/or professional judgement has been introduced to these assumptions.

- The topic chapters included in this PEIR consider the following mitigation types: measures included as part of the scheme’s design including good practice measures (sometimes referred to as mitigation by design or embedded mitigation)
- measures proposed to avoid effects occurring or to minimise environmental effects, and are not included within the design (referred to as additional mitigation); and
- measures proposed that bring additional benefits to the project but are not necessary to make the development acceptable (referred to as enhancements).

3.7. Cumulative and In-Combination Effects

3.7.1. In accordance with the EIA Regulations, the applicant will consider cumulative effects. Cumulative impacts are those effects of the scheme that may interact in an additive or subtractive manner with the impacts of other developments including those that are not currently in existence but may be by the time the Scheme is implemented. Examples of these kinds of effects that can be readily appreciated could include:

- Traffic generated from developments, affecting the surrounding road network;
- Air quality effects from developments; and
- Discharges to the water environment.

3.7.2. The scope of cumulative assessment includes identification of a long list of development within the appropriate Zone of Influence (Zol) for each topic discipline, which will form the basis of the search area for the cumulative effects assessment. The cumulative effects assessment will draw upon the method as set out within Planning Inspectorate’s Advice Note on Cumulative Effects Assessment, published in August 2019. Table 3.6 identifies the four stage process to assess cumulative effects. As part of the consultation on the PEIR, the applicant will seek to agree the shortlist for cumulative effects assessment within the Environmental Statement.

Table 3.6: Summary of the four stage process for cumulative effect assessment

Cumulative Effect Assessment Stage	Description of Stage
Stage 1	Establish the National Significant Infrastructure Project’s Zone of Influence and identify long list of ‘other developments’.
Stage 2	Identify shortlist of ‘other developments’ for Cumulative Effects Assessment.
Stage 3	Information gathering of the ‘other developments’
Stage 4	An assessment of the likely cumulative effects. Mitigation measures are identified (where appropriate) where an adverse cumulative effect is identified. The apportionment of effect between the scheme and the ‘other developments’ is considered, eg whether the contribution to the effect is demonstrably related to one development or whether there is an equal contribution from either development.

3.8. Stage 1 – Establishing the long list of other existing and, or approved development

3.8.1. In accordance with the Planning Inspectorate’s Advice Note on Cumulative Effects Assessment the first task in establishing the long list of relevant other existing development and/or approved development(s) is to determine the ‘search area’. For the purposes of this preliminary assessment, the ‘search area’ has been determined by affording consideration to the Zone of Influence for each environmental factor within the PEIR.

Zone of Influence

3.8.2. The proposed ‘Zone of Influence’ for each environmental topic area has been identified based on the extent of likely effects as identified as the study area in each of the individual topic chapters of this PEIR. The ‘Zone of Influence’ has been proposed in line with industry specific guidance along with professional judgement and knowledge of the local area relevant to each environmental topic area. The identified ‘Zone of Influences’ are presented in Table 3.7 below for the scoped in topic chapters.

Table 3.7 Zone of Influence

Topic	Proposed Zone of Influence
Landscape and visual	Landscape and visual receptors: 3km from the order limits
Residential visual amenity	Residential receptors: up to 500m from the order limits.
Nature Conservation and Biodiversity	<ul style="list-style-type: none"> • International statutory designated sites: 10km from order limits; • National statutory designated sites: 5km from order limits; • Non-statutory designated sites: 2km from order limits ; • Protected/Priority/Notable species records: 2km from order limits; • Habitat, water vole & otter and invertebrate scoping surveys: within the order limits; • Great crested newt survey: order limits and extending to 250m; • Breeding bird survey: order limits and extending to 100m; • Non-breeding bird survey: order limits and extending to 600m; • Nightjar survey; focussed within Thorne & Hatfield Moors situated within and adjacent to the order limits; and, • Badger survey: order limits and extending to 30m
Cultural Heritage	Cultural heritage receptors: 1km and the Zone of Theoretical Visibility
Ground Conditions	Cumulative development within 1km of the order limits.
Water Resource	Hydrological and hydrogeological receptors within a 2km radius from the scheme, based on the hydrological and hydrogeological connectivity of water bodies located in the vicinity of the scheme.
Socio Economic	Administrative areas of host local planning authorities

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Transport and Access	Extent of the local road network affected by the construction and decommissioning phases up to the M180, as well as any identified sensitive receptors.
Noise and vibration	The study area for the construction phase assessment is defined by the noise and vibration sensitive receptors that have the potential to be affected by noise and vibration caused by construction activities. The study area for the operational assessment includes noise sensitive receptors (NSRs) in the local area located within 1km from the order limits.
Air quality	The air quality assessment considers the potential for impacts from construction and operational traffic on roads considered within the transport assessment. For construction dust, the assessment considers up to 350 m from the order limits and within 50 m of the routes used by construction vehicles up to 500 m from the site exits. GHG emissions from the scheme contributes to climate change globally, not just locally, and therefore it is not appropriate to define a zone of influence
Agricultural circumstances	Agricultural land and soils within the order limits

3.8.3. The overall combined 'search area' for the long list of relevant other existing development and/or approved development(s) has been based on the largest Zol in terms of distance, which in this case is 10 km, which is the study area for internationally designated sites for the preliminary biodiversity assessment. Following the adoption of the 10 km Zol, a desk study exercise was undertaken to identify other known proposed developments within the 10 km Zol, using Landstack⁵, Planning Inspectorate's Planning Portal and other relevant sources. This generated a long list of sites and this is presented at **Appendix 3.1**. This long list will be kept under review and agreed with City of Doncaster Council and North Lincolnshire Council prior to the completion of the ES to allow for a robust assessment of cumulative effects. The information provided in Appendix 18.1 is accurate as of 6 February 2025. The long list of other existing and/or approved development will be established using the tiered approach in accordance with Planning Inspectorate's Advice Note on Cumulative Effects Assessment.

3.8.4. Only the following types of other existing developments and/or approved developments have been considered for inclusion on the long list, as the Applicant considers that any development that does not fall within these types would not likely give rise to a significant cumulative effect:

- NSIP developments
- Energy developments

⁵ <https://www.landstack.co.uk/>

- Infrastructure developments
- Industrial developments
- Minerals and waste developments
- Residential developments with 10 or more units
- Commercial and Employment developments

3.8.5. Of the development types listed above, the Developments included in the initial long-list are based on the following criteria:-

- Development On the National Infrastructure Planning Programme of Projects where, as a minimum, an EIA Scoping Opinion has been requested
- Planning applications yet to be determined or have been determined within the last 3 years
- Planning applications that have been refused but subject to appeal procedures within the last 3 years
- Development identified in the relevant Development Plan (and emerging Development Plans);
- Development identified in other plans and programmes which set the framework for future development consents/approvals where such development is reasonably likely to come forward.
- For residential development the threshold was 10 or mor units
- For all qualifying development types, site area threshold was set at 1 acre or more.

3.8.6. Criteria are developed and applied to filter developments which may be excluded from the initial long list, having regard to the size and spatial influence of each development. This long list will be kept under continual review up until the point of DCO submission. Projects that are under construction and expected to be completed before the submission of the DCO would be considered as part of the baseline. Projects that are under construction but not expected to be completed prior to the commencement of scheme will remain on the long list.

3.8.7. The assessment will consider all relevant project types, including other DCO projects registered with the Inspectorate's National Infrastructure Team. Any operational schemes will be assessed as part of the relevant baseline study. This will be kept under review until the application is submitted.

3.9. Stage 2 – Establishing a Short List of other existing and, or approved development

3.9.1. Following the formation of the long list, further assessment was undertaken to establish a short list of other existing development and/or approved developments which, in combination with the Scheme, have the potential to result in significant cumulative effects. The criteria should be used to include or exclude development projects which fall with the ZOI for the Scheme. The

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Planning Inspectorate's Advice Note on Cumulative Effects Assessment identifies how the criteria for selection should be presented at an early stage and should address: –

- Temporal scope – The relative construction, operation and decommissioning programmes of the other existing and, or approved developments identified in the ZOI together with the NSIP programme, to establish whether there is overlap and any potential for interaction.
- Scale and nature of development – The scale and nature of the other existing and, or approved developments identified in the ZOI that are likely to interact with the proposed NSIP.
- Other factors – For example, the nature and, or capacity of the receiving environment, which could make a significant cumulative effect with the other existing and, or approved developments more or less likely.

3.9.2. The Planning Inspectorate's Advice on Cumulative Effects also identifies how professional judgement may be used to supplement the threshold criteria and to avoid excluding other existing and, or approved developments that is

- below the threshold criteria limits but has characteristics likely to give rise to a significant effect, or
- below the threshold criteria limits but could give rise to a cumulative effect by virtue of its proximity to the proposed NSIP

3.9.3. Professional judgement is applied to support the exclusion of other existing and, or approved development that exceeds the thresholds but may not give rise to evident effects. Taking the above into consideration, the other existing development and/or approved developments on the long list have been reviewed against the following principles to form the short list of other existing development and/or approved developments:

- Principle 1: The proposed and/or approved development has an expected construction, operational and/or decommissioning phase that overlaps with any phase of the Scheme
- Principle 2: The other proposed and/or approved development and the Scheme share common sensitive receptors/resources which are assessed and described in the supporting environmental documentation, and have the potential to be significantly affected by the combination of the other proposed development and/or approved development and the Scheme
- Principle 3: The other proposed and/or approved development has sufficient environmental assessment information freely and publicly available to inform the inter-project cumulative effects assessment.

3.9.4. Where an existing development and/or approved development meets all of the above criteria, it has been included on the 'short list' and will be taken forward for further consideration in the assessment. The 'short list' is detailed below in **Table 3.8**. This short list will be kept under review and agreed with City of Doncaster Council and North Lincolnshire Council prior to the completion of the ES to allow for a robust assessment of cumulative effects. Note that the identification numbers in the first column of the table correspond with those in **Appendix 3.1**.

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Table 3.8 Potential shortlist

ID	District	Address	Application Reference	Decision	Development	Distance from nearest part of Order Limits
2	North Lincolnshire	Farmhouse, North Moor Farm, Belton	PA/2024/1245	Granted	Planning permission to erect an extension to an existing anaerobic digestion facility.	within order limits
5	Doncaster	Thorpe Marsh Ash Fields Marsh Lane Barnby Dun Doncaster	23/00537/ FULM	Granted	Reclamation through construction and operation of Energy Hub incorporating 1.4GW and 50MW Battery Energy Storage, substation and associated infrastructure, including earthworks to existing material to provide development platform.	8.6km to the west
8	North Lincolnshire	land West of Scotter Road South, The Lakes, Scunthorpe	PA/SCR/2024/10	NA	EIA screening request for circa 1,200 dwellings, a local centre and school, green infrastructure, drainage infrastructure, open space and associated highway infrastructure	5km to the east
11	North Lincolnshire	Land off Burringham Road, Ashby Parklands, Scunthorpe	PA/2024/780	Pending Decision	Application for approval of reserved matters (appearance, landscaping, layout and scale reserved) pursuant to outline planning permission PA/2020/1333 dated 29/06/2021 for 128 dwellings	4.16km to the east
12	North Lincolnshire	land off Burringham Road	PA/2023/1124	Pending Decision	Planning permission for the development of 593 dwellings, 200sqm commercial unit (Use Class E) and lake, along with associated infrastructure, including landscaping, public open space and play area, pedestrian and cycle links, pumping station and sub-station	3.5km to the east
13	East Riding of Yorkshire Council	Middleton Quarry Heck And Pollington Lane Pollington East Riding Of Yorkshire	24/03257/ STPLFE	Pending Decision	Hybrid Application consisting of a) Full Planning Permission for the removal and remediation of contaminated material, extraction of sand and gravel and the reinstatement of the void with imported restoration materials and b) Outline Permission for residential development (of up to 74 dwellings) with associated public open space and habitat enhancement	9km to the north west
14	East Riding of Yorkshire Council	Middleton Quarry Heck And Pollington Lane Pollington	23/01961/ EIASCR	NA	Sand and gravel extraction, remediation, restoration and fill with inert waste, residential development of up to no.150 dwellings.	9km to the north west

PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

Approach to Environmental Impact Assessment

ID	District	Address	Application Reference	Decision	Development	Distance from nearest part of Order Limits
16	Doncaster	Land At Former Blaxton Quarry Mosham Road Auckley Doncaster	23/01971/REMM	Granted	Details of appearance, landscaping, layout and scale for B2, B8 and Class E:(g) Employment uses of 31,846 square metres for up to 52 units and parking. (from appeal 22/00040/NONDET allowed 17/04/2023.)	10km to the south
18	East Riding of Yorkshire Council	Field 69172103 Rawcliffe Estate Bridge Lane Rawcliffe Bridge East Riding Of Yorkshire .	24/01628/REG3	Granted	Construction of Solar Farm comprising of ground mounted solar panels, underground cabling, a temporary construction compound, new access tracks, 2.0m to 2.5m high perimeter fencing and access gates with 3.5m high CCTV cameras, battery storage containers and associated infrastructure	6km to the north
19	Doncaster	Land To The South Of Alexandra Street Thorne	24/02105/FULM	Pending Decision	Erection of 220 dwellings with associated infrastructure.	1.15km to the west
20	Doncaster	Land To The South Of Alexandra Street Thorne Doncaster	19/00099/OUTM	Granted	Outline Permission for the erection of 207 dwellings with associated infrastructure, parking, hard surfaces, public open space, balancing pond/biodiversity sink and associated works. (Permission being sought for access).	1.15km to the west
35	Doncaster	Land South Of Doncaster Road Cantley Doncaster .	21/03645/FULM	Granted	Residential development of 187 dwellings including associated access and infrastructure.	10km to the south west
38	North Lincolnshire	Land north of Burringham Road, Burringham Road, Scunthorpe	PA/2023/1750	Pending Decision	Planning application to erect 158 dwellings with associated car parking, garages, landscaping, open space, pedestrian circulation and links, pumping station, infrastructure works and access from Burringham Road	4km to the east
39	North Lincolnshire	land south of Silica Lodge Garden Centre, Scotter Road South, Scunthorpe	PA/2023/1585	Pending Decision	Planning permission for 81 dwellings	4.73 km to the east

PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

Approach to Environmental Impact Assessment

ID	District	Address	Application Reference	Decision	Development	Distance from nearest part of Order Limits
40	Doncaster	Hungerhill Business Park Herald Road Edenthorpe Doncaster	24/00700/ REMM	Pending Decision	Details of appearance, landscaping, layout and scale for the erection of 178 dwellings (Phase 2 development) (being matters reserved in outline application previously granted permission under ref: 23/01709/OUTM on 08.02.2024).	8.5km to the west
42	Doncaster	Slated House Farm Stone Hill Hatfield Woodhouse Doncaster	19/01745/ OUTM	Refused/ Dismissed	Outline planning application for residential development of up to 100 dwellings, local convenience store (Use Class A1) with open space, landscaping, associated access and infrastructure with means of access to be agreed.	1.2km to the west
44	Doncaster	Hungerhill Business Park Herald Road Edenthorpe Doncaster	21/03631/ REMM	Granted	Details of appearance, landscaping, layout and scale for the erection of 241 dwellings (Phase 1 development) (being matters reserved in outline application previously granted permission under ref: 18/02592/3OUTM on 29.05.2019 (as subsequently varied under ref: 23/01709/OUTM).	8.5km to the west
49	Doncaster	Hungerhill Business Park Herald Road Edenthorpe Doncaster	23/01709/ OUTM	Granted	Outline application for residential development of up to 542 dwellings on approx. 20.9ha of land with associated public open space, parking, landscaping and infrastructure (approval being sought for access) without compliance with condition 18 of planning application reference 23/00138/OUTM granted on 26/04/2023.	8.5km to the west
54	Doncaster	Land On The East Side Of Hatfield Lane Armthorpe Doncaster	23/01099/ REMM	Granted	Details of appearance, landscaping, layout and scale for 382 residential dwellings being matters reserved in outline application 12/00188/OUTM, granted on 27/10/2017 (being variation of condition 1 of application 20/01421/REMM to change the house type from C2 to C for plots 1, 2, 26, 27, 34, 35, 37, 38, 66, 67, 98, 99, 118, 119, 127, 128, 132 and 133).	7km to the south west
56	North Lincolnshire	Garden Centre, Belton Road, Epworth	PA/SCR/ 2023/2	Not Applicable	EIA screening request for a mixed use scheme to include residential, retail, commercial, charity, health, leisure, open space and landscaping - AMENDED DOCUMENT - Initial Feasibility	4.53km to the south

TWEEN BRIDGE SOLAR FARM

PEIR VOLUME 1 MAIN REPORT – CHAPTER 3 APPROACH TO ENVIRONMENTAL IMPACT ASSESSMENT

MARCH 2025

PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

Approach to Environmental Impact Assessment

ID	District	Address	Application Reference	Decision	Development	Distance from nearest part of Order Limits
57	Doncaster	Land To The East Of Mere Lane Edenthorpe Doncaster	22/00255/ REMM	Granted	Details of Access, Appearance, Landscaping, Layout and Scale of design for 248 units with 25 affordable units and 223 open market units (being matters reserved in outline application previously granted permission under ref 15/01278/OUTM on 05/02/2019). (Amended Plans and Description)	7.1km to the west
58	Doncaster	Former Hatfield Colliery Waggons Way Stainforth Doncaster	22/01934/ OUTM	Granted	Outline application (all matters reserved) for the erection of up to 36,378 sq m (GIA) of industrial estate development (Use Classes B2, B8 and E(g)); up to 2,787sq m (GIA) of community, leisure and commercial uses (Use Classes E, F1 and F2) and associated works	4.3 km to the west
60	North Lincolnshire	Woods along Scotter Road, Scunthorpe	PA/2021/ 1990	Granted	Application for approval of reserved matters (namely: appearance, landscaping, layout and scale) pursuant to outline approval PA/2018/2186 dated 05/11/2019 for the erection of 36 dwellings .	4.5km to the east
64	East Riding of Yorkshire Council	Land North Of The Acres Rawcliffe Road Goole East Riding Of Yorkshire	22/00702/ STREM	Granted	Erection of 600 dwellings with associated access, parking and infrastructure (access, appearance, landscaping, layout and scale to considered) following outline approval 15/00305/STOUT	8.8km to the north
65	East Riding of Yorkshire Council	Land South Of Pontefract Road Snaith East Riding Of Yorkshire	22/00123/ STREM	Granted	Erection of 160 dwellings and associated landscaping including 5.9 Hectares of open space following Outline Permission 19/03512/STOUT (Appearance, Landscaping, Layout and Scale to be considered)	8km to the north west
66	North Lincolnshire	Land South Of, Moorwell Road, Yaddletorpe, Bottesford	PA/2022 /1628	Granted	Application for approval of reserved matters (appearance, landscaping, layout and scale) pursuant to outline planning permission PA/2019/1782 dated 03/04/2020 for a residential development of up to 200 dwellings	5.5km to the east
67	Doncaster	Land North West Of Hatfield Lane Armthorpe Doncaster	22/00155/ REMM	Granted	Details of access, appearance, landscaping, layout and scale for the erection of 400 dwellings with associated public open space and sustainable drainage systems (being reserved matters for outline	8km to the south west

PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

Approach to Environmental Impact Assessment

ID	District	Address	Application Reference	Decision	Development	Distance from nearest part of Order Limits
					application 16/02224/OUTM, granted on 14.11.2019)	
68	Doncaster	Land At Former Blaxton Quarry Mosham Road Auckley Doncaster	22/00250/OUTM	Appeal Granted	Outline Planning Permission (including means of access only) for B2, B8 and Class E:(g) - Employment uses of 31,846 square metres for up to 52 units and parking	10km to the south
72	Doncaster	Land Between Hatfield, Stainforth, Duncroft And Dunsville Doncaster	22/01345/REMM	Granted	Details of Access, Appearance, Landscaping, Layout and Scale of Design for the erection of 246 dwellings and associated infrastructure (being matters reserved in outline application previously granted permission under ref 15/01300/OUTA on 21.04.2017	3km to the west
83	Doncaster	Land On The North East Side Of Selby Road Thorne .	22/00590/REMM	Granted	Details of appearance, landscaping, layout and scale for the construction of employment units, internal estate roads, associated landscaping and infrastructure (being reserved matters for outline application 16/02136/OUTA, granted on 20.01.2022)	1.4km to the west
86	North Lincolnshire	Land north of Chapel Lane, Keadby	PA/SCR/2021/8	Not Applicable	EIA screening request relating to a proposed 49.9MW solar farm - NEW DOCUMENTS - Preliminary Ecological Appraisal and Wintering Bird Report	2.3km to the north
87	North Lincolnshire	land at Brigg Road, Access located between 57 and 71 Brigg Road, Messingham	PA/2020/554	Appeal Granted	Hybrid application comprising full planning permission to erect five dwellings and outline planning permission for 94 dwellings with appearance, landscaping, layout and scale reserved for subsequent consideration	8.6km to the south east

3.9.5. Turning to national significant infrastructure projects, the shortlist will also extend to include the following DCO projects: –

- Little Crow Solar Park Order 2022 (S.I. No. 436) granted in 2022.
- North Humber to High Marnham – National Grid proposed 400kV electricity transmission connection between Birkhill Wood and High Marnham. Currently at the statutory consultation stage with project programme outlining DCO submission for Summer 2026.
- Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order 2022 granted in December 2022

PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

Approach to Environmental Impact Assessment

- North Lincolnshire Green Energy Park, application was accepted on 27 June 2022, and examination closed on 15 May 2023. Now at the decision stage.
- Fenwick Solar Farm, application was accepted on 3 December 2024. Now at the examination stage.

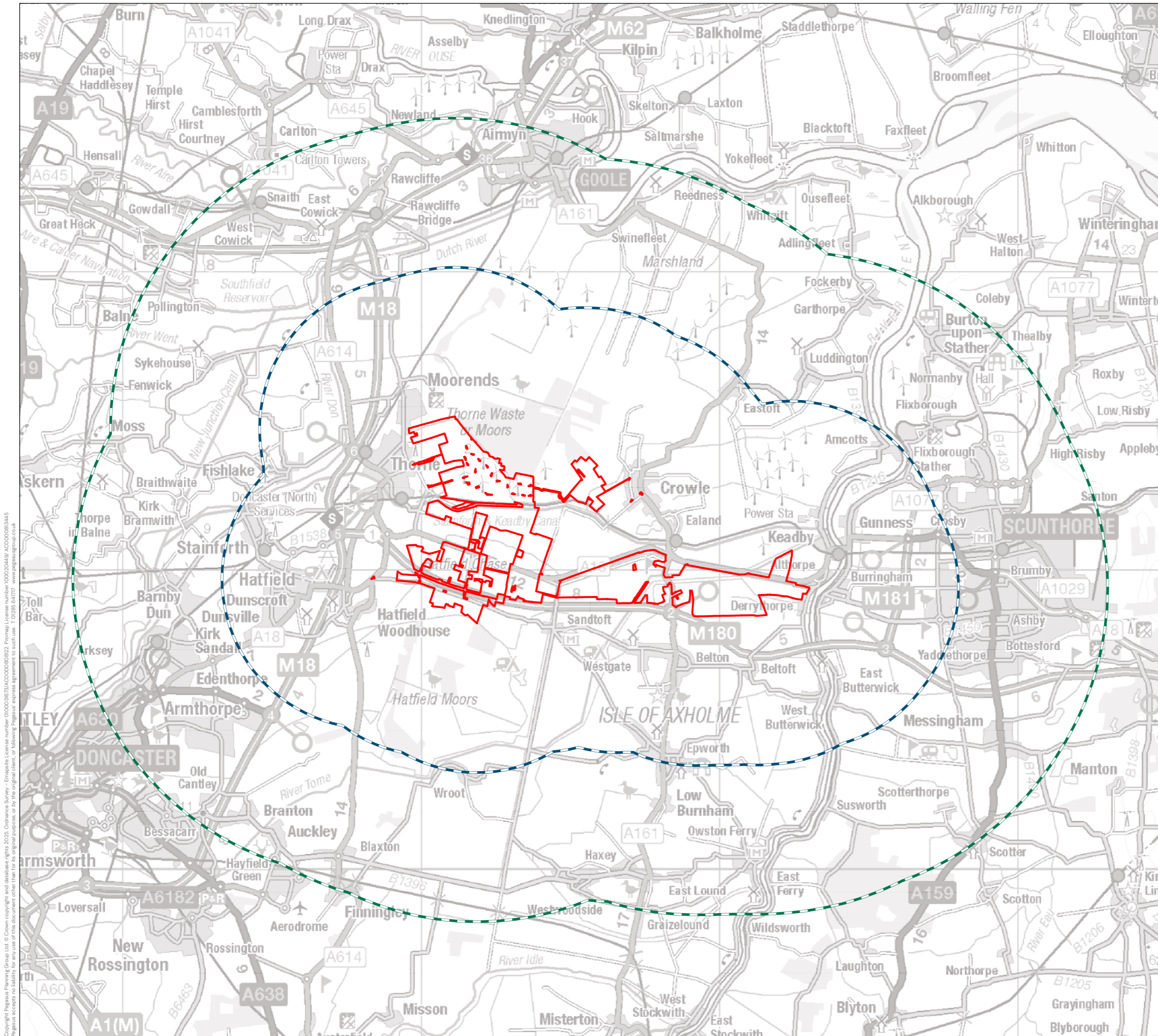
3.9.6. The shortlisted sites will be subject to further review of environmental information. A full cumulative assessment will be reported in the ES. Likely effects will be identified, for example on local accommodation during the construction phase of the Scheme. Should likely significant cumulative effects be identified, consideration will be given to additional mitigation to avoid, prevent, reduce or, if possible, offset any identified significant adverse cumulative effects.

3.9.7. There is no formal guidance on the criteria for determining significance of cumulative effects. For the full assessment to be presented in the ES, the following principles will be considered when assessing the significance of inter-project cumulative effects, in accordance with the Planning Inspectorate's Advice Note on Cumulative Effects Assessment and in consideration of any mitigation measures required to avoid, prevent, reduce or, if possible, offset any identified significant adverse cumulative effects:

- Is there an inter-project cumulative effect on any receptors/resources;
- The duration and frequency of the effects;
- The nature of the receptors/resources affected;
- How the impacts identified combine to affect the condition of the receptor/resource;
- The probabilities of the impacts occurring in relation to each other in such a way so as to produce a cumulative effect, considering the extent and duration of the impact change;
- The ability of the receptor/resource to absorb further impacts; and
- Is the level of effect different to that considered at the project level and is the cumulative effect significant or not.

Figure 3.1

Cumulative Long List Radius



KEY

- DRAFT ORDER LIMITS
- 10KM ZONE OF INFLUENCE
- 5KM ZONE OF INFLUENCE

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REV	DATE	DESCRIPTION

CUMULATIVE LONG LIST

TWEEN BRIDGE SOLAR

RWE				
DATE	SCALE	TEAM/DRAWN	APPROVED	
10/02/2025	1:125,000@A3	EN/RL	GR	
SHEET	REV	N	O	2.5KM
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