Frodsham Solar

Environmental Statement: Volume 1

Chapter 4: Environmental Impact Assessment Methodology

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4.1 Introduction

4.1.1 This chapter of the Environmental Statement (ES) sets out the approach to the Environmental Impact Assessment (EIA), providing an outline of the general structure of each ES chapter and how this relates to the EIA process.

4.1.2 It also explains the general process of identifying and assessing the likely significant environmental effects associated with the Proposed Development, and outlines the measures proposed to avoid, prevent, reduce, or, where required, offset any significant adverse effects identified during the EIA process.

4.1.3 More in-depth information regarding specific methodologies, including survey techniques and data collection methods, is provided in the relevant topic-specific chapters (see **ES Volume 1: Chapters 5-12 [EN010153/DR/6.1-6.3]**).

4.1.4 The core purpose of EIA is to identify, describe and assess the direct and indirect significant effects (both adverse and beneficial) of the Proposed Development, which is an iterative and staged process. As the Proposed Development is a Nationally Significant Infrastructure Project (NSIP), the following are the key EIA reporting stages through to submission of the application for development consent:

i) **EIA Screening** – depending on the scale of the development, EIA screening is undertaken to establish whether the development has the potential to give rise to significant environmental effects and therefore be considered 'EIA development.' The screening process evaluates the project's scale, nature, and location to ascertain the likelihood of potential significant effects occurring. As part of this process, the Applicant can determine itself whether the project is EIA Development and volunteer an ES or seek a Screening Opinion from the Secretary of State. The Applicant did not request a Screening Opinion but instead acknowledged that the

Proposed Development has the potential for significant environmental effects, and therefore notified the Secretary of State of their intention to provide an ES with the application for development consent.

ii) **EIA Scoping** – Once a project is determined to require an EIA, the scoping phase begins. The purpose of scoping is to identify the key environmental issues that need to be assessed, ensuring that the EIA focuses on the likely significant impacts. This stage helps to outline the specific parameters and methodologies that will be used in the assessment, providing clarity on what will be included in the ES. An EIA Scoping Report, setting out the Applicant's proposed scope of the EIA, was submitted to the Planning Inspectorate on 30th May 2023. The statutory consultees, including the relevant Local Planning Authorities, were consulted by the Planning Inspectorate on the EIA Scoping Report. The Planning Inspectorate issued its Scoping Opinion on 10th July 2023. The Scoping Opinion informs the scope of the EIA.

iii) **Preliminary Environmental Information** – Following scoping, the Applicant prepares and consults on Preliminary Environmental Information (PEI) provided within a PEI Report (PEIR). The PEIR must provide sufficient information for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development). The PEIR was published as part of the Statutory Consultation, which ran from the 7th November to 19th December 2024. The PEIR presented the Applicant's Preliminary Environmental Information for the Proposed Development and took the form of an early draft ES.

iv) **Environmental Statement** – Following the consultation on the PEIR, the Applicant has prepared an ES for submission with the application for the DCO. This ES presents comprehensive findings from the environmental assessment conducted by the Applicant, detailing the likely significant environmental effects of the proposed development and the mitigation measures designed to avoid, reduce, and offset adverse effects. The findings of the ES will be considered as part of the decision-making

process regarding whether to grant development consent. The ES has incorporated feedback received during the statutory consultation process, particularly comments on the PEIR. The Applicant has also engaged with various statutory consultees and relevant organisations to inform the design of the Proposed Development. Feedback from the comprehensive consultation process undertaken with the community and statutory consultees has been integrated into the ES.

4.1.5 The ES has been prepared to satisfy the requirements of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as 'the EIA Regulations')[i]. In general, whilst preparing this ES, reference has been made to the following guidance:

i) Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents (2025)[ii];
ii) Nationally Significant Infrastructure Projects: Advice on working with public bodies in the infrastructure planning process (2025)[iii];
iii) Nationally Significant Infrastructure Projects: Advice on EIA Notification and Consultation (2025)[iv];
iv) Nationally Significant Infrastructure Projects - Advice Note 7: Environmental Impact Assessment Process, Preliminary Environmental Information and Environmental Statements (2025)[v];
v) Nationally Significant Infrastructure Projects - Advice Note 9 Rochdale Envelope (2025)[vi];
vi) Nationally Significant Infrastructure Projects: Commitments Register (2025)[vii]
vii) Nationally Significant Infrastructure Projects: Advice on working with public bodies in the infrastructure planning process (2025)[viii]; and
viii) Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (2025)[ix] (PINS Advice on CEA).

4.2 Scope of the Environmental Impact Assessment

4.2.1 The scoping process aims to identify the key environmental issues early in the planning, design and environmental assessment stage of the Proposed Development. It focuses on determining which aspects of the project are likely to cause significant effects on the environment. By doing so, the scoping process helps to establish the necessary extent of surveys and assessments required for the EIA.

4.2.2 As set out in **ES Vol 1 Chapter 1: Introduction [EN010153/DR/6.1]**, an EIA Scoping Report was submitted to the Planning Inspectorate on 30th May 2023 (see **ES Vol 2 Appendix 1-1: Frodsham Solar Scoping Report (May 2023) [EN010153/DR/6.2]**). The Planning Inspectorate reviewed and consulted on the EIA Scoping Report and published a Scoping Opinion on 10th July 2023 (the Scoping Opinion) which included the formal responses received by the Planning Inspectorate from consultees (see **ES Vol 2 Appendix 1-2: Planning Inspectorate Scoping Opinion (July 2023) [EN010153/DR/6.2]**). This ES is based on the Scoping Opinion.

4.2.3 Reference has been made to the Scoping Opinion received from the Secretary of State when preparing the ES and the advice contained within it regarding assessment methodology, topics and presentation of the ES, together with responses received through the Scoping Opinion consultation process. Pursuant to paragraph 2.2.7 of the Scoping Opinion, each technical chapter summarises the comments received in the Scoping Opinion relevant to that topic and explains how these have been considered in the assessment.

4.2.4 Appendix 4-5 responds to the Scoping Opinion in relation to Description of the Development (Section 2.1) and EIA Methodology and Scope of Assessment (Section 2.2).

4.2.5 Table 4-1 below summarises the scope of the EIA using the titles provided within the Scoping Opinion. The table describes where topics have been ‘scoped in’ for detailed assessment, in accordance with the Scoping Opinion, and where this is provided within the ES. The table also identifies those topics

'scoped out' of detailed assessment, and where environmental information relating to these topics can be found or how these topics will be addressed within the subsequent DCO application.

Table 4-1: Summary scope of the EIA

Topic	Scoped In / Out	ES Chapter / Approach to Assessment
Landscape and Visual	Scoped In	**ES Vol 1 Chapter 6.0: Landscape and Visual Amenity**
Ecology and Nature Conservation	Scoped In	**ES Vol 1 Chapter 7.0: Terrestrial Ecology** **ES Vol 1 Chapter 8.0: Ornithology**
Flood Risk, Drainage and Surface Water	Scoped In	**ES Vol 1 Chapter 9.0: Flood Risk and Surface Water**
Ground Conditions	Scoped In	**ES Vol 1 Chapter 10.0: Ground Conditions**
Cultural Heritage and Archaeology	Scoped In	**ES Vol 1 Chapter 11.0: Cultural Heritage**
Climate Change	Scoped In	**ES Vol 1 Chapter 5.0: Climate Change**
Noise and Vibration	Scoped Out	PINS agreed that noise and vibration effects during all phases of the Proposed Development associated with plant and machinery are unlikely to give rise to significant effects. **ES Vol 2 Appendix 4-1 Noise Impact Assessment** provides an assessment of the Proposed Development demonstrating that impacts from noise remain unlikely to be significant. The **Outline CEMP, outline oOEMP and outline oDEMP [EN010153/DR/7.5-7.7]** describe the measures that would be adopted to control noise during the construction, operational and decommissioning phases respectively. These management plans are secured via the Requirements in Schedule 2 of the draft DCO.
Socioeconomic, Land Use and Tourism	Partially Scoped In	PINS requested that matters relating to tourism should be scoped in for assessment and this was confirmed through further discussion with CWaCC. This assessment is included in **ES Vol 1 Chapter 13.0: Tourism and Recreation.** Other matters relating to socio-economics and land use were agreed to be scoped out. Effects on recreational use of Public Rights of Way (PRoW) and National Cycle Network (NCN) are considered within **ES Vol 1 Chapter 2.0**, including measures to safeguard users during construction. Additional permissive paths have been proposed as part of the Proposed Development (see **ES Vol 3: Figures 2-4 and 2-**

Topic	Scoped In / Out	ES Chapter / Approach to Assessment
		5) An **Outline PRoW Management Plan [EN010153/DR/7.9]** has been provided with the DCO application setting out further details on measures to protect PRoW users during construction and how the PRoW would be managed during operation. The **Outline Landscape and Ecology Management Plan (oLEMP) [EN010153/DR/7.13]** also provides information on the provision and management of permissive paths that would be delivered as part of the Proposed Development.
Traffic and Transport	Scoped Out	PINS agreed that environmental effects relating to traffic and transportation can be scoped out. As agreed with CWaCC, a **Transport Assessment [EN010153/DR/7.3]** has been provided to assess the impacts of traffic on the operational highway network, including consideration of fear and intimidation. The scope of the Transport Assessment was agreed with CWaCC, including the proposed routing arrangements, the approach to driver delay, and cumulative impacts associated with other developments. The Transport Assessment demonstrates that significant environmental effects relating to Traffic and Transport would not occur. An **Outline Construction Traffic Management Plan [EN010153/DR/7.4]** has also been provided with the DCO application that sets out how traffic would be managed during the construction period.
Air Quality	Scoped Out	PINS agreed to scope out impacts on air quality. Measures to control impacts on air quality are described within the **Outline CEMP [EN010153/DR/7.5]**. A Construction Dust Assessment is included as **ES Vol 2 Appendix 4-2: Construction Dust Assessment**., including impacts on the Mersey Estuary SSSI, Ramsar and SPA. The DCO application is also supported by an **Outline Battery Safety Management Plan [EN010153/DR/7.8],** which includes an assessment of air quality effects which could arise as a result of a fire at the BESS.
Other Environmental Topics		
Glint and Glare	Scoped Out	PINS agreed that a standalone Glint and Glare chapter is not required. A Glint and Glare Assessment is provided as **ES Vol 2 Appendix 4-3: Glint and Glare Assessment**, and the findings have been integrated into the assessments within **ES Vol 1 Chapter 6.0: Landscape and Visual Amenity.**

Topic	Scoped In / Out	ES Chapter / Approach to Assessment
Agricultural Land	Scope Out	PINS agreed that this topic is scoped out based on the Agricultural Land Classification survey (ALC) provided with the Scoping Report (**ES Vol 2 Appendix 1-1 Scoping Report**).
Human Health	Scope Out	PINS agreed to scope this topic out the requirement for a standalone human health chapter, subject to consideration of the National Grid 400kV line crossing the Site, and other elements of the application considering matters which could impact human health. **ES Vol 1 Chapter 2.0 Proposed Development** considers the presence of the 400kV line and how this could impact users of the Site. Other relevant matters relating to Human Health are considered in: **ES Vol 1 Chapter 6.0 Landscape and Visual Amenity; Chapter 9.0 Flood Risk, Drainage and Surface Water Quality; Chapter 10.0 Ground Conditions; Chapter 12.0 Tourism; ES Vol 2 Appendix 4-1 Noise Impact Assessment; ES Vol 2 Appendix 4-2: Construction Dust Assessment; Transport Assessment [EN010153/DR/7.3]; Outline Battery Safety Management Plan [EN010153/DR/7.8]; Outline CEMP [EN010153/DR/7.5].**
Major Accidents and Disasters	Scoped Out	PINS agreed that a standalone Major Accidents and Disasters Chapter is scoped out of the ES providing matters relating to fire are considered. **ES Vol 1 Chapter 2.0 Proposed Development** considers the potential for a fire within the BESS and an **Outline Battery Safety Management Plan [EN010153/DR/7.8]** is provided with the DCO application.
Waste	Scoped In	**ES Vol 1 Chapter 2.0 Proposed Development** describes the types of waste and how these would be managed during the construction, operational and decommissioning phases of the Proposed Development.

4.2.6 In response to the Scoping Opinion, this ES includes the following chapters:

i) ES Vol 1 Chapter 1: Introduction
ii) ES Vol 1 Chapter 2: Proposed Development
iii) ES Vol 1 Chapter 3: Alternatives and Design Evolution
iv) ES Vol 1 Chapter 4: EIA Methodology
v) ES Vol 1 Chapter 5: Climate Change

vi) ES Vol 1 Chapter 6: Landscape and Visual Amenity

vii) ES Vol 1 Chapter 7: Terrestrial Ecology

viii) ES Vol 1 Chapter 8: Ornithology

ix) ES Vol 1 Chapter 9: Flood Risk and Water Quality

x) ES Vol 1 Chapter 10: Ground Conditions

xi) ES Vol 1 Chapter 11: Cultural Heritage and Archaeology

xii) ES Vol 1 Chapter 12: Tourism and Recreation

xiii) ES Vol 1 Chapter 13: Cumulative and In Combination Effects

xiv) ES Vol 1 Chapter 14: Summary of Environmental Effects

4.3 Consultation

4.3.1 The views of consultation bodies and the local community serve to focus the environmental studies and to identify specific issues that require further investigation, as well as to inform aspects of the design of the Proposed Development.

4.3.2 The formal approach taken by the Applicant to consultation is set out in the Frodsham Statement of Community Consultation (May 2023) ('the SoCC'). This was supplemented with an addendum provided to Cheshire West and Chester Council (CWaCC) and Halton Borough Council in October 2024 confirming the approach to the Phase 2 consultation, described below. These documents are provided within the **Consultation Report Appendices [EN010153/DR/5.2]**.

4.3.3 The Applicant has been actively engaging with Local Planning Authorities (LPAs), Statutory Environmental Bodies and other relevant stakeholders as part of the EIA process. This includes dialogue and consultation prior to and during the EIA Scoping process, which culminated in the Scoping Opinion issued in July 2023.

4.3.4 The Applicant has been holding monthly meetings with Planning Officers at CWaCC since September 2023 and has agreed a Planning Performance Agreement (PPA) that sets out the terms of current and future engagement with CWaCC during the Pre-Application Stage of the application.

4.3.5 A series of meetings / consultations have been held with other technical Officers at the LPA covering the following topics:

i) Highways;
ii) Public Rights of Way;
iii) Cultural Heritage;
iv) Archaeology;
v) Landscape;
vi) Economic Development;

vii) Local Lead Flood Authority;
viii) Environmental Health and Protection (including Contaminated Land officer); and
ix) Ecology and Nature Conservation.

4.3.6 The Applicant has also been engaging regularly with the following Statutory Consultees: Historic England, Natural England, National Highways and the Environment Agency.

4.3.7 Cheshire Fire Rescue Service (CFRS) were consulted in May 2024 and March 2025 in relation to the Frodsham Solar BESS to understand any specific requirements they have as the local fire and rescue service. Feedback from the CFRS has been used to inform the **Outline Battery Safety Management Plan [EN010153/DR/7.8]**.

4.3.8 Each chapter of this ES sets out a summary of the engagement undertaken for each topic, and how that has influenced what is considered in that chapter.

Community Consultation

4.3.9 The Applicant has undertaken a two-stage approach to pre-application consultation on the Proposed Development. Phase 1 comprised an informal, non-statutory consultation during Summer 2023. Phase 2 was a formal statutory consultation and was undertaken from 7th November to 19th December 2024, as set out above the Phase 2 consultation included publication of the PEIR. A targeted consultation of affected landowners was also held in early 2025 to account for further land referencing activities and a small adjustment to the Order limits.

4.3.10 During these consultation phases the Applicant engaged with the local community via briefings, in-person information events, webinars and provided project information across a range of media types.

4.3.11 An Adequacy of Consultation Report was issued to CWaCC on the 17th February 2025 setting out the consultation activities undertaken, the key

themes which arose from the consultation and a summary of how these have been accounted for in the application. CWaCC confirmed that it considered the Applicant had carried out adequate pre-application consultation in accordance with the statutory provisions.

4.3.12 A **Consultation Report [EN010153/DR/5.1]** has been prepared and submitted with the DCO application. This report complies with Sections 37(3)(c) and 37(7) of the Planning Act 2008 and outlines the consultations conducted under the relevant sections of the Act, along with associated legislation and guidance, including the government's advice on the preparing consultation reports[x]. It details all consultations held during the pre-application period, including the responses received, and includes the Applicant's responses regarding how the feedback from consultees has been addressed.

4.3.13 Section 4 of each technical chapter within the ES (Chapter 5.0 – 12.0) describes the key feedback provided from statutory consultees and how these have been considered within the assessment.

4.4 Approach to Assessment

4.4.1 This section sets out the approach taken within each technical chapter of the ES, under the headings used within each chapter.

4.4.2 In order to provide a consistent and robust assessment, each of the technical chapters (Chapter 5.0 to 12.0) presented within the ES follow the general structure set out as follows:

i) Introduction;
ii) Legislation, Policy, and Guidance;
iii) Assumptions and Limitations;
iv) Consultation and Engagement;
v) Assessment Methodology;
vi) Baseline Conditions;
vii) Incorporated Mitigation, and Enhancement Measures;
viii) Assessment of Likely Impacts and Effects;
ix) Additional Mitigation, Enhancement and Monitoring;
x) Residual Effects;
xi) Cumulative Effects; and
xii) Conclusions.

4.4.3 The introduction to each chapter will provide a statement outlining the relative expertise and qualifications of the specialist that has undertaken the assessment.

Legislation, Policy and Guidance

4.4.4 This section of each ES chapter describes the legislation, planning policy and guidance relevant to the assessment of the topic area. This section is not intended to provide a comprehensive analysis of whether the Proposed Development would comply with legislative requirements and does not provide an appraisal of the Proposed Development against the planning policies identified. However, this section helps to inform the reader of the relevant documents which have informed the approach to the assessment,

and also the factors the decision maker will need to take into account when considering the acceptability of the Proposed Development.

4.4.5 An analysis of the Application's compliance with policy is included in the **Policy Compliance Document [EN010153/DR/5.7].**

Assumptions and Limitations

4.4.6 This section of each ES chapter sets out any key assumptions and limitations to the assessment.

Consultation and Engagement

4.4.7 This section of each ES chapter outlines consultation and engagement undertaken during the pre-application period with Statutory Consultees. It also sets out how comments received are addressed within the chapter.

Assessment Methodology

4.4.8 This section of each ES chapter provides details of the assessment method followed and typically includes:

i) A description of the study area used for the assessment;
ii) The approach taken to gathering of any desk-based or field data. Where specific surveys have been undertaken an outline of the survey methodology will be provided;
iii) The approach to the impact assessment. This includes how the particular topic has defined the sensitivity of environmental receptors, the magnitude of impacts, and how these relate to the overall level of effect and significance in EIA terms.

Rochdale Envelope and Scheme Parameters

4.4.9 As set out in **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]**, it is necessary for the technical assessments to assess an 'envelope' within which the works will take place. As such, the EIA is based upon maximum and, where relevant, minimum parameters which are defined

in Chapter 2, taking account of the limits of deviation shown on the **Works Plans [EN010153/DR/2.3]** and the Design Principles set out in Design Approach Document (DAD) **[EN010153/DR/5.8]**. To remain in accordance with the EIA Regulations[i] the parameters are as 'limited' as possible to ensure that the 'likely significant effects' are identified. These parameters are considered in detail in Chapter 2 and where necessary in the Assessment Methodology section of technical chapters to ensure the realistic worst-case effects of the Proposed Development are assessed for each potential receptor.

Temporal Scope - Assessment Years

4.4.10 The assessment of effects for each environmental topic is structured around the following phases:

i) Construction Phase;
ii) Operational Phase; and
iii) Decommissioning Phase.

Construction Phase

4.4.11 It is assumed the Construction Phase will begin in January 2028 and take 30 months to complete, with a conclusion date of mid 2030.

4.4.12 The effects of the Proposed Development during construction will vary depending on the activity being undertaken, with some construction activities expected to last longer than others. For example, the impact of laying access tracks during the enabling works will be relatively short, whilst the electrical works to install the solar arrays will persist over a longer period.

4.4.13 As set out in **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]** the construction works are likely to be split into different sub-projects / packages to enable the development to be delivered in the most efficient manner. **ES Vol 2 Appendix 2-2: Indicative Construction Phasing and Resource Schedule [EN010153/DR/6.2]** illustrates the indicative

phasing envisaged for the purposes of the EIA. In order to assess a reasonable worst case, the phasing includes an overlap of the construction for the two solar array areas and the BESS/Frodsham Substation. As described in **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]** the works to create the Non Breeding Bird Mitigation Area (NBBMA) will be undertaken prior to any construction work commencing on Cells 1, 2 and 5 to ensure that habitat remains available for use by qualifying species of the SPA whilst the Cell 3 is being re-engineered.

Operational Phase

4.4.14 It is assumed that the Proposed Development would be commissioned and become fully operational in mid 2030 and will have a 40 year operational period.

4.4.15 The effects of the Proposed Development once operational will be restricted to its operation, use, and maintenance of the equipment and landscaping.

4.4.16 For most environmental topics, operational effects are considered to be either short-term, medium-term, or long-term as follows:

i) Short-term – a change typically persisting for less than three years;
ii) Medium-term – a change typically persisting for between three and ten years; and
iii) Long-term – a change typically persisting for more than ten years.

4.4.17 In addition, effects can be defined as reversible or permanent. Reversible effects are those which would end once the Operational Phase is complete, and the Proposed Development is decommissioned. Permanent effects are those which cannot be reversed.

4.4.18 As set out in the **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]** there will be a requirement for certain components of the development to be replaced during the 40 year operational period. Where this is relevant, the impact of this will be assessed.

Decommissioning Phase

4.4.19 The Proposed Development is being applied for on a temporary basis with a 40 year operational period. It is assumed that the Decommissioning Phase would commence in 2070 and take between 12 and 24 months to complete.

4.4.20 The effects of the Proposed Development at decommissioning are similar in nature to the Construction Phase, although they would be of a shorter duration and of less intensity. For example, removing the solar PV mounting structures at the Decommissioning Phase is a relatively straightforward and quick task compared to accurately piling them into the correct position during the Construction Phase.

4.4.21 For most environmental topics, decommissioning effects are generally considered to be short-term and lasting only for the duration of the Decommissioning Phase.

Spatial Scope – Geographical Area

4.4.22 The spatial scope or 'study area' of each assessment is set out in the relevant technical chapter, including the rationale for determining the study area. The study areas generally relate to the geographic area in which there is potential for a receptor to experience a significant impact.

Baseline Conditions

4.4.23 This section of each ES chapter provides a description of the baseline conditions relevant to the topic being assessed. The baseline conditions have been established through consultation, collation and analysis of existing data sets and reports, and in some cases site-specific field data. The baseline identifies any sensitive receptors or resources that need to be evaluated in the assessment.

4.4.24 Each chapter provides an outline of the likely evolution of the baseline conditions without implementation of the Proposed Development as far as natural changes from the baseline scenario can be assessed. This 'future

baseline' is then taken into account when assessing the likely effects of the project over its lifetime where this is relevant.

Incorporated Mitigation and Enhancement Measures

Overview

4.4.25 It is a requirement of the EIA Regulations[i] to describe the measures envisaged to avoid, prevent, reduce, and where possible, offset any significant effects on the environment. These measures, which can include monitoring and enhancement, can be used to reduce, avoid or offset any adverse effect, whether or not that effect is deemed to be 'significant' in EIA terms. This approach is often referred to as the mitigation hierarchy, with mitigation being selected as high up the hierarchy as possible:

i) Avoid;
ii) Prevent;
iii) Reduce; and
iv) Offset / Compensate.

Incorporated Mitigation

4.4.26 Incorporated mitigation (sometimes referred to in other projects as embedded mitigation) is that which is considered to form an intrinsic part of the Proposed Development and has therefore been taken into account as part of the assessment of effects. The purpose of incorporated mitigation is to avoid, prevent or reduce likely significant effects as part of the design process or through measures which must be committed to, either via legislation (e.g. Wildlife and Countryside Act 1980) or Requirements set out in the DCO.

Design

4.4.27 The design process began at the outset of the project through the identification of key constraints on the Site which guided the approach to the indicative design and the design parameters set out in **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1].** This is considered a first

step in avoiding significant environmental effects where practicable. Some of the factors taken into account in this process are set out in **ES Vol 1 Chapter 3: Alternatives and Design Evolution [EN010153/DR/6.1]**.

4.4.28 A series of Design Principles have been established from the outset of the project to guide decision making in relation to the design of the Proposed Development, and to avoid or minimise the environmental impacts of the Proposed Development as far as practicable. These Design Principles are described in **ES Vol 1 Chapter 2: The Proposed Development [EN010153/DR/6.1]** and Section 4.0 of the **Design Approach Document (DAD) [EN010153/DR/5.8].** Further detail on the approach taken to the design process described in the **DAD** . Compliance with the Design Principles is secured through via a Requirement in Schedule 2 of the draft DCO. The Design Principles have informed the production of an Indicative Environmental Masterplan (refer to **ES Vol 3 Figure 2-3: (a-e) Illustrative Environmental Masterplan [EN010153/DR/6.3]**), incorporating measures to achieve the relevant Design Principles for the Proposed Development. The measures set out in the Indicative Environmental Masterplan, including the delivery of the NBBMA (further details of which are provided in **ES Vol 1 Chapter 8: Ornithology [EN010153/DR/6.1]**) form part of the Incorporated Mitigation as set out in the **Outline Landscape and Ecology Management Plan [EN010153/DR/7.13]**. This is secured via a Requirement in Schedule 2 of the draft DCO.

Control Documents

4.4.29 Standard best practice measures will be incorporated into the construction, operation and decommissioning of the Proposed Development via the implementation of a series of certified ‘control documents’. Control documents include any documents certified within the draft DCO which provide specific and detailed practical controls on the Proposed Development. The mitigation which is described within the control documents is secured via the Requirements in Schedule 2 of the draft DCO.

4.4.30 The Control documents which describe mitigation to be employed to avoid or reduce adverse environmental effects of the Proposed Development are as follows:

i) **Outline Construction Environmental Management Plan (oCEMP) [EN010153/DR/7.5]**
ii) **Outline Construction Traffic Management Plan (oCTMP) [EN010153/DR/7.4]**
iii) **Outline Operational Environmental Management Plan (oOEMP) [EN010153/DR/7.6]**
iv) **Outline Decommissioning Environmental Management Plan (oDEMP) [EN010153/DR/7.7]**
v) **Outline Landscape and Ecology Management Plan (oLEMP), including the Non-Breeding Bird Mitigation Strategy (NBBMS) [EN010153/DR/7.13]**
vi) **Outline Battery Safety Management Plan (oBSMP) [EN010153/DR/7.8]**
vii) **Outline Public Rights of Way Management Plan (oPROWMP) [EN010153/DR/7.9]**
viii) **Outline Skills, Supply Chain and Employment Plan (oSSEMP) [EN010153/DR/7.11]**
ix) **Framework Flood Warning and Evacuation Plan (Appendix M of ES Vol 2 Appendix 9-1: Flood Risk Assessment and Drainage Strategy [EN010153/DR/6.2]**
x) **Outline Soils Management Plan (oSMP) [EN010153/DR/7.10]**

4.4.31 Post-consent, the above outline management plans will be developed into full plans which must be in substantial accordance with the outline, and will require approval by CWaCC. The Proposed Development must be undertaken in accordance with those full approved plans. This is secured via a Requirement in Schedule 2 of the draft DCO.

4.4.32 A full list of all mitigation measures proposed and how they are secured in the DCO is provided in a **Commitments Register [EN010153/DR/7.2]** submitted with the DCO application.

4.4.33 Enhancement measures that have been incorporated into the design, which are not required as mitigation for the Proposed Development, but are environmental opportunities the Proposed Development will deliver to achieve additional benefits, are also described in this section in each chapter.

Assessment of Likely Significant Effects

4.4.34 This section of the chapter describes the likely significant environmental effects of the Proposed Development (inclusive of the Incorporated Mitigation) on the baseline conditions at the Site and the surrounding area relevant to the assessment topic. The assessment includes a description of the nature, extent and significance of these effects. The assessment of effects considers the construction, operational and decommissioning phases of the Proposed Development.

4.4.35 The EIA Regulations do not provide definitive methods for the assessment of significance and a variety of methods are employed within environmental statements. The method used to assess the effects is specific to each discipline. Where available and appropriate, the assessments follow impact assessment criteria and methodology set out by relevant professional institutions. Where such guidance is not available, or prescriptive methods are not set out by the relevant professional body, then assessment criteria are developed by the technical specialists to enable a clear and structured assessment to be undertaken.

4.4.36 The level of the effect is, in general, derived by considering the magnitude of the impact and the sensitivity of the receptor to a change resulting from the Proposed Development.

4.4.37 Depending on the discipline, there are several factors that need to be taken into account when establishing the type and magnitude of an impact, including:

i) whether the impact is adverse or beneficial;
ii) whether it is temporary or permanent;
iii) extent or spatial scale of the impact;
iv) duration of the impact;
v) whether the impact is reversible; and
vi) probability / likelihood of the impact.

4.4.38 Similarly, the sensitivity of a receptor is the function of several elements dependent on the discipline and effect being assessed, these could include:

i) designation and legal status;
ii) quality;
iii) rarity; and
iv) ability to adapt to change.

4.4.39 Having established the magnitude of the impact and the sensitivity of the receptor, the level of the effect is then defined. For some disciplines, a matrix is used to classify the level of effect by correlating magnitude of impact and sensitivity. Where a matrix is to be used it will be set out within the relevant chapter and the levels of effect described.

4.4.40 Where a matrix is not used, the magnitude of impact and the sensitivity of the receptor is used to make a reasoned professional judgement to establish the level of the effect and whether it is considered to be significant or not significant. For some topics, e.g. ground conditions, an environmental risk assessment approach may be used to establish the potential environmental effects of the Proposed Development.

4.4.41 Where the findings of an assessment are set out as different levels of effect (e.g. major, moderate, minor, etc.) the assessment clearly sets out where an

effect is considered to be significant in EIA terms. This may vary between disciplines and the threshold is defined within each chapter of the ES.

4.4.42 In all instances, the assessments set out the basis of the judgements made so that the readers of the ES can understand the rationale of the assessment. In this sense, the ES clearly explains how likely significant effects are identified.

Additional Mitigation and Monitoring

4.4.43 Where incorporated mitigation cannot fully prevent a likely significant effect occurring, or is only partially effective, additional measures are proposed where it is considered these could help reduce the level of effect being experienced by a receptor.

4.4.44 Where incorporated mitigation measures are sufficient to avoid likely significant effects occurring, or where additional mitigation is either not possible, may result in a significant operational constraint or would reduce the function of the Proposed Development, then additional mitigation may not be provided.

4.4.45 Monitoring may be considered necessary to establish the success or otherwise of proposed mitigation or enhancement. This may be to ensure that the mitigation has been implemented successfully, or it may be needed so that mitigation can be adjusted over time to ensure it delivers the intended outcome. Monitoring may be explicitly described within the chapter or could be integrated into the management plans which form part of the incorporated mitigation.

Residual Effects

4.4.46 This section of each ES chapter provides a textual description of the likely residual effects of the Proposed Development following the implementation of any additional mitigation measures.

Cumulative Effects

4.4.47 This section of each ES chapter provides an assessment of the likely significant cumulative effects which could arise with other projects identified within the Cumulative Effects Assessment (CEA) shortlist, which is described in more detail in Section 4.6 below.

Conclusions

4.4.48 This section of each ES chapter provides a summary of the effects of the Proposed Development and any conclusions that can be drawn.

4.5 Indirect Effects

4.5.1 In order to comply with Regulation 5(2) and Schedule 4 of the EIA Regulations[i] specifically in relation to the provision that *the "indirect significant effects of the proposed development"* are assessed, the EIA process must consider the likely upstream and downstream effects of the Proposed Development. Upstream effects are deemed to be those indirect effects which could arise prior to the construction, operational or decommissioning processes occurring on site, which enable that element of the development to be undertaken. Downstream effects are those indirect effects which may arise from the actions or outputs of the construction, operational or decommissioning processes.

4.5.2 Indirect upstream and downstream environmental impacts have been considered where:

i) the impact would be an inevitable causation of the Proposed Development; and
ii) the impact would give rise to likely significant effects that are capable of evidence-based meaningful assessment.

4.5.3 Examples of this include consideration of the embedded carbon associated with the manufacture and transportation of solar PV modules within the carbon calculations set out in **ES Vol 1 Chapter 5: Climate Change [EN010153/DR/6.1]** i.e. an indirect upstream impact of the Proposed Development; or the impacts on the economy of businesses in Frodsham which could arise from changes in tourist numbers visiting the area as a result of the Proposed Development set out in **ES Vol 1 Chapter 12: Tourism and Recreation [EN010153/DR/6.1]** i.e. an indirect downstream impact of the Proposed Development.

4.5.4 Note that a reduction in UK greenhouse gas emissions as a result of the renewable electricity generated by the Proposed Development reducing the reliance on electricity generated from fossil fuel sources is treated as a direct

impact of the Proposed Development, and is considered in **ES Vol 1 Chapter 5: Climate Change [EN010153/DR/6.1]**.

4.5.5 **ES Vol 1 Chapter 14: Summary of Environmental Effects [EN010153/DR/6.1]** provides a tabulated summary of the likely residual significant effects of the Proposed Development.

4.6 Cumulative and In-Combination Effects

Introduction

4.6.1 This section sets out the methodology used to assess the cumulative likely significant effects arising from the construction, operation and decommissioning of the Proposed Development.

4.6.2 Cumulative effects typically fall to be considered within two distinct categories, comprising:

i) Cumulative inter-project effects – effects arising from the residual (post-mitigation) environmental effects of the Proposed Development combining and interacting with the residual environmental effects of one or more other committed developments within 10km of the Proposed Development.
ii) In-combination intra-project effects – are those arising from the interaction and combination of different residual (post-additional mitigation) environmental effects of the Proposed Development affecting a single receptor. Individually the effects may not be significant, but the accumulation of effects may, collectively, give rise to a significant overall effect.

4.6.3 As set out above, each technical chapter will include a section that considers the likely significant cumulative inter-project effects. Chapter 13.0 of the ES will summarise the conclusions of the inter-project effects from all of the technical chapters and will also provide the in-combination intra-project effect assessment.

4.6.4 The assessment of cumulative inter project effects has been carried out in accordance with the four stages of Cumulative Effects Assessment (CEA), set out within PINS Advice on CEA[xiv].

4.6.5 The **HRA [EN010153/DR/5.3]** also provides an assessment of in-combination effects on the Mersey Estuary SPA, which considers the same projects

identified in the CEA short list which is described below. Similarly, the Transport Assessment [EN010153/DR/7.3] assesses the potential for cumulative effects in relation to traffic and transport, accounting for schemes identified by CWaCC and National Highways that are deemed to have the potential to give rise to cumulative impacts on the local highway network, which incorporates a subset of the developments of the CEA shortlist.

4.6.6 This section is supported by the following Appendices:

i) **ES Vol 2 Appendix 4-4: Long List of other 'reasonably foreseeable' developments [EN010153/DR/6.2]**
ii) **ES Vol 2 Appendix 4-5: Short List of other 'reasonably foreseeable' developments [EN010153/DR/6.2]**

4.6.7 This section is supported by the following Figures:

i) **ES Vol 3 Figure 4-1: Long List and Short List Cumulative Schemes – 10km [EN010153/DR/6.3]Figure 4-2**
ii) **ES Vol 3 Figure 4-2: Long List and Short List Cumulative Schemes – 1km [EN010153/DR/6.3]**
iii) **ES Vol 3 Figure 4-3: Short List Cumulative Schemes – 1km [EN010153/DR/6.3]**

Legislation, Policy and Guidance

Legislation

4.6.8 The requirement to consider in-combination and cumulative effects is set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017[i] (the EIA Regulations). Regulation 5(2)(e) requires the consideration of 'interactions', it states that:

"The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the

proposed development on the following factors- …(e) the interaction between the factors referred to in sub-paragraphs (a) to (d).”

4.6.9 Factors (a) to (d) relate to population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape.

4.6.10 In terms of cumulative effects Paragraph 5 of Schedule 4 of the EIA Regulations[i] describes the requirement to consider cumulative effects:

“A description of the likely significant effects of the development on the environment resulting from, inter alia: ...(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources…

The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.” (our emphasis)

National Planning Policy

4.6.11 Relevant policies from the following National Policy Statement (NPS) documents and the National Planning Policy Framework (last updated 2025) are summarised in Table 4-2:

iv) Overarching NPS for Energy EN-1 (NPS EN-1[xi]) (2024); and
v) NPS for Renewable Energy Infrastructure (NPS EN-3[xii]) (2024) and
vi) NPS for Electricity Networks Infrastructure (NPS EN-5[xiii]) (2024).

Table 4-2: Summary of National Planning Policy

Document	Policy	Summary of Policy
NPS EN-1	Para 4.1.5	In considering any proposed development, in particular when weighing its adverse impacts against its benefits, the Secretary of State should take into account.… • ….Its potential adverse impacts, including on the environment, and including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts, following the mitigation hierarchy
	Para 4.2.12	Applicants should set out how residual impacts will be compensated for as far as possible. Applicants should also set out how any mitigation or compensation measures will be monitored and reporting agreed to ensure success and that action is taken. Changes to measures may be needed e.g. adaptive management. The cumulative impacts of multiple developments with residual impacts should also be considered.
NPS EN-3	Paras 2.10.25-2.10.26	"….applicants may choose a site based on nearby available grid export capacity. Where this is the case, applicants should consider the cumulative impacts of situating a solar farm in proximity to other energy generating stations and infrastructure."
	2.10.94	The approach to assessing cumulative landscape and visual impact of large-scale solar farms is likely to be the same as assessing other onshore energy infrastructure. Solar farms are likely to be in low lying areas of good exposure and as such may have a wider zone of visual influence than other types of onshore energy infrastructure.
	2.10.157	The Secretary of State will consider the landscape and visual impact of any proposed solar PV farm, taking account of any sensitive visual receptors, and the effect of the development on landscape character, together with the possible cumulative effect with any existing or proposed development. Nationally designated landscapes (National Parks, The Broads and Areas of Outstanding Beauty) are afforded extra protection due their statutory purpose. Development in these areas needs to satisfy policy as set out in EN-1 Section 5.10.
NPS EN-5	2.9.10	Cumulative adverse landscape, seascape and visual impacts may arise where new overhead lines are required along with other related developments such as substations, wind farms, and/or other new sources of generation.

Document	Policy	Summary of Policy
	2.13.20	Whist under the heading of offshore-onshore connections this policy states that applicants should refer to policy text in EN-3 (including section 2.8) and EN1 (including sections 4.4 and 5.4) regarding consideration of impacts and cumulative impacts in the environment, as well as policy text in the remainder of this policy statement regarding consideration of impacts onshore.
NPPF	Para 198	Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the Site or the wider area to impacts that could arise from the development.

Guidance

4.6.12 In the absence of an agreed standard method for cumulative effects assessment, PINS Advice on CEA[xiv] is deemed to be the most appropriate guidance for the Proposed Development.

4.6.13 PINS Advice on CEA advocates a staged approach for documenting the cumulative effects assessment within an ES for an NSIP. The PINS Advice highlights the need to consider the potential for cumulative effects arising due to the interactions between different components of the development, as well as with other existing development and / or approved development.

4.6.14 Whilst PINS Advice on CEA provides a basis for the assessment of cumulative effects between the Proposed Development and other developments, it fails to provide guidance on the assessment of intra-project effects. Other guidance does exist on the assessment of intra-project effects, including guidelines prepared by the European Commission[xv], and this has been used to inform the assessment.

Stakeholder Engagement

4.6.15 Table 4-3 provides details of consultation responses received as part of the EIA Scoping Opinion and actions taken by the Application.

Table 4-3: EIA Scoping Opinion Responses

Consultee	Consultation Response	Applicant Response
PINS – EIA Scoping Opinion (July 2023 - Reference 2.2.3)	The ES should clearly explain how the Zone of Influence (ZoI) was determined and influenced the identification of the study area, noting that this is likely to be dependent on the aspect being assessed.	The cumulative effects assessment follows the methodology set out in PINS Advice on CEA. The individual ZOI's, set out in this ES chapter have been established using guidance and best practice, where available, and professional opinion of competent experts, having regard to the nature of the proposed development and susceptibility of receptors. The extent of the ZOI has been discussed CWaCC along with the long list of sites for assessment.
PINS – EIA Scoping Opinion (July 2023 - Reference 2.2.6)	Paragraph 6.8.14 of the Scoping Report notes the Applicant's intention to assess effect interactions. The Inspectorate is content with the proposed approach; however, the ES should also assess the potential for intra-cumulative effects that may occur as a result of proposed mitigation for a specific environmental aspect or matter e.g. a noise bund in terms of landscape and visual impact and mitigation planting on buried archaeological assets etc.	The assessment provided in the ES will account for all mitigation measures included in the design and as such intra-cumulative effects will be inherent within the assessments.
PINS – EIA Scoping Opinion (July 2023 - Reference 3.1.10)	Photomontages - The Applicant should consider the potential for cumulative landscape and visual effects from the interaction of the Proposed Development and cumulative developments. The Applicant should consider illustrating potential cumulative effects through visualisations to indicate the changing views and visual amenity compared with the visual impacts of the project being assessed on its own.	ES Vol 1 Chapter 6: LVIA includes an assessment of cumulative landscape and visual effects (refer to **Section 6.11** of ES Vol 1 Chapter 6). As likely significant cumulative landscape and visual effects have not been identified from any Viewpoint, cumulative schemes have not been added to the photomontages.
PINS – EIA Scoping Opinion (July 2023 - Reference 3.9.8)	Cumulative effects for transport Impacts – The assessment should ensure that the EIA considers use by the Proposed Development cumulatively with the proposed HyNet development along with any other	Transport has been scoped out of the ES. However, committed schemes with the potential to result in cumulative highways impacts have been included in the Transport Assessment (**ES**

Consultee	Consultation Response	Applicant Response
	projects. Projects to be included should be discussed and agreed with the Local Planning Authority.	**Vol 2 Appendix 4-2**). These schemes were agreed through consultation with Local Highways Authority and National Highways and include the HyNet projects in the locality of the Proposed Development. The Transport Assessment concludes that there would not be any likely cumulative significant effects.
CWaCC – EIA Scoping Opinion (ID 1.1.2)	The ES needs to identify the parameters of mitigation areas and buffers, and include other constraints/consideration of cumulative development (e.g. the Hynet hydrogen pipeline proposals).	The HyNet project has been considered in the design of the Proposed Development to ensure both projects can be delivered. Frodsham Solar Ltd have been in consultation with HyNet. The PEIR for the HyNet Hydrogen Pipeline sets out that construction of pipeline strings would be undertaken outside the core non-breeding bird period, limiting the potential for impacts on the SPA.
CWaCC – EIA Scoping Opinion (ID 8.1.42)	As part of the cumulative assessment, the ES should consider the potential impact of Cell 6 not being used for dredging and (whether by design, a change to the management regime, or some other factor, such as the impacts of climate change) the impact of Cell 6 not continuing to form a water body attracting waterfowl.	Cell 6 management is controlled by a Condition of the Frodsham Wind Farm permission and so is expected to function throughout the 25 year life of that project. Cell 6 is not under the ownership or control of the Applicant and so its future use, which will be controlled by any prevailing planning permissions or Environmental Permits, is unknown.

Table 4-4 – PEIR Consultation Responses

Consultee / Respondent	Comment	Response
Liverpool Bay CCS	Request that the Runcorn Spur Pipeline and the HyNet Carbon Dioxide Pipeline is included in the CEA. The consultation response made specific reference to Landscape and Visual Amenity, Terrestrial Ecology, Ornithology, Flood Risk, Drainage and Surface Water and Ground Conditions. It is LBCCS's intention to continue discussions between the respective	The Runcorn Spur Pipeline has been included in the Long List and has been taken forward into the Short List of projects assessed within this chapter. Dialogue has been undertaken between the Applicant and Eni (the applicant for the Runcorn Spur Pipeline). The HyNet carbon dioxide pipeline project has been included in the CEA provided within this chapter.

Consultee / Respondent	Comment	Response
	projects to coordinate on construction schedules and minimise disruption.	

Where consultation responses reference cumulative assessment concerning specific topics, these are addressed in the relevant topic chapter.

4.6.16 The Applicant has engaged with CWaCC when preparing the cumulative effects assessment to agree the Zones of Influence and also the criteria used to establish the long list of projects (Stage 1 set out below). Having prepared the long list the Applicant has consulted CWaCC with the projects identified and the projects proposed to be taken forward for more detailed assessment (Stage 2 set out below). The feedback provided by CWaCC has informed the approach taken to the assessment.

Cumulative (Inter Project) Effects Assessment

Introduction

4.6.17 The EIA assesses the cumulative, inter project, effects of the Proposed Development, based upon the methodology set out in the PINS Advice on CEA[xvi]. The advice advocates a four-stage approach to the Cumulative Effects Assessment (CEA), which is outlined in Table 4-4 below.

Table 4-4: CEA Stages

Stage	Task
Stage 1 - Establishing the long list	Establish a Zone of Influence (ZOI) for the environmental topics scoped into the EIA.
	Carry out a desk study to develop long list of 'other developments' and assign a Tier (dependant on their progress towards determination within the planning system) to each of the 'other development'.
	Consult with Local Authorities (LAs) and Statutory Consultees on the list.
Stage 2 – Establishing the short list	Consider inclusion / exclusion criteria (set out in PINS Advice on CEA) on whether 'other development' has potential to cause significant cumulative effects due to overlap in temporal scope or scale and nature of the development. Also consider the need for any variants to the inclusion / exclusion criteria that are specific to the Proposed Development

Stage	Task
	Shortlist 'other developments' and outline key issues to be taken forward.
	Consult with LAs and Statutory Consultees on the list
Stage 3 – Information gathering	Gather available information on shortlisted 'other projects'.
Stage 4- Assessment	Assess each shortlisted 'other project' in terms of cumulative effects.
	Consult with other developers, if required, to obtain detail on the potential environmental impacts of the project and to jointly address mitigation of significant adverse cumulative effects.

4.6.18 Each stage is described in more detail below.

Stage 1 – Establish the NSIP's ZOI and Identifying a Long List of 'Other Development'

4.6.19 Stage 1 is based around establishing a long list of other existing and / or approved developments. To develop the long list of 'other developments' the ZOI for environmental topics scoped into the EIA was established and is outlined in Table 4-5 below. PINS Advice on CEA confirms that the scale and nature of the project will typically dictate a broad spatial and temporal ZOI. The ZOI for the Proposed Development has been determined through a combination of PINS Scoping Opinion, consultation with the relevant consultees, industry specific guidance and / or professional judgement. The Zol's have been prepared robustly and most match or exceed the study areas for individual environmental topics.

Table 4-5: Zone of Influence for Environmental Topics

Environmental Topic	Zone of Influence (measured from nearest order limit)
Landscape and Visual	5km
Cultural Heritage - Designated Sites including Scheduled Monuments, I and II* Listed Buildings & Registered Parks and Gardens (RPG) and Registered Battlefields	5km

Environmental Topic	Zone of Influence (measured from nearest order limit)
Cultural Heritage - Non-designated Sites, other known heritage assets and archaeological investigations	1km
Ecology - International statutory designations	10km
Ecology – Nationally or Locally designations, protected and priority habitats and species	2km
Water Resources	1km
Traffic and Transport	Scoped out of ES but committed schemes assessed in TA via consultation with CWaCC Highways Authority
Noise and Vibration	Scoped Out of ES
Air Quality	Scoped out of ES
Ground Conditions	250m
Tourism	1km
Climate Change	It is not considered appropriate to include this topic in the cumulative assessment. GHG emissions are not restricted to a geographical area.

4.6.20 The largest ZoI is 10km and that has been used for the establishment of a Long List of ‘other developments reasonably foreseeable’ developments.

4.6.21 The ZoI has been taken from the Order Limits. However, in determining the likelihood of significant cumulative effects arising from the Proposed Development the ZoI relating to the different project components is relevant. In particular, the Main Site Access extends circa 5km to the west of the Solar Array Development Area (SADA). The section of the Main Site Access outside the SADA is an existing access track which will only require very minor improvement works (e.g. filling of potholes). The existing track has been developed to serve Frodsham Wind Farm and as such is already trafficked by HGVs periodically. There would still be impacts arising during the construction phase associated with movement of traffic, and the laying of a cable within

the section of the Main Access up to Hoolpool Gutter (see **ES Vol 3 Figure 1-2: Proposed Development Areas [EN010153/DR/6.3]**). However, the magnitude, duration and nature of the impact are such that the likelihood of significant cumulative effects occurring in relation to this component of the project is low. Where the nature of effects associated with use of, and development within, the Main Access Road are particularly relevant this has been be accounted for in the CEA by reviewing whether any schemes which may not be captured from the ZoI described above need to be pulled into the assessment.

Identification of Long List Schemes

4.6.22 The identification of long list schemes has been based on a desk-based study of planning applications, development plan documents and relevant development frameworks in a search area of 10km from the draft Order Limits. This includes the planning portals operated by the Planning Inspectorate, CWaCC, Halton Borough Council, Warrington Borough Council, St Helens Borough Council, Knowsley Council, Liverpool City Council and Wirral Borough Council. The search criteria used to establish the long list has been agreed with CWaCC and includes:

1) Approved applications which have not yet been constructed covering the past five years and taking account those that received planning consent over three years ago and are still valid but have not yet been implemented, and meets one of (3) to (9);
2) Submitted applications not yet determined meeting one of (3) to (9);
3) On the National Infrastructure Planning Programme of Projects;
4) Applications for EIA development under the Town and Country Planning Act (or other regime);
5) Development identified in the Development Plan such as Allocated Sites not captured in (4) (see below search method relating to Allocated Sites);
6) Any sites that have been registered or achieved a positive EIA screening opinion under the Town and Country Planning Act (or other regime);

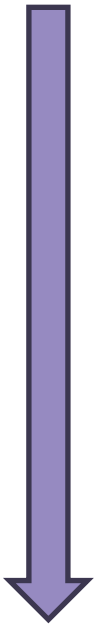
7) Any sites that have requested an EIA Scoping Opinion under the Town and Country Planning Act 1990 (or other regime);
8) Other applications for solar development, excluding householder or small-scale roof mounted solar developments; and
9) Other schemes that do not meet the above criteria but which a statutory stakeholder specifically requests to be included. This includes the following development types requests by CWaCC:
    - Battery Storage Projects
    - Gas Peaking Plants
    - Projects in and around Protos / Encirc
    - HyNet (H_2 pipeline, CO_2 pipeline, Runcorn Spur CO_2 pipeline)
    - Major Development applications as set out in The Town and Country Planning (Development Management Procedure) (England) Order 2015 within 1km of the SADA

4.6.23 Where 'other existing development and/or approved development' are already operational or are substantially completed, and the effects are understood, those effects are considered within the ES as part of the baseline/future baseline, as appropriate. The cumulative effects will therefore be included as part of the construction, operation and decommissioning assessments. This, for example, includes Frodsham Wind Farm, and existing developments at Protos, including the Protos Energy Recovery Facility, which is now substantially complete.

4.6.24 PINS Advice on CEA recommends that a range of future projects be included within the assessment. It advocates that they are tiered (from Tier 1-3) according to how advanced the development is within the planning process and the level of detail that is likely to be available for each tier.

4.6.25 The different tiers are set out in Table 4-6 below which is based on the 3-tier system set out in PINS Advice on CEA.

Table 4-6: Project Tiers for the CEA

Tier	Description	Decreasing Level of Detail available for Stage 2 Assessment
Tier 1	• Development that is currently under construction; • Approved applications (under the Planning Act 2008, Town and Country Planning Act 1990 or other regimes) which have not yet been implemented; • Submitted applications (under the Planning Act 2008, Town and Country Planning Act 1990 or other relevant regimes) not yet determined; • This category includes refused applications under the Town and Country Planning Act 1990, but which have commenced appeal procedures and have yet to be determined.	
Tier 2	• projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted; • Projects under the Town and Country Planning Act 1990 where an EIA Scoping Opinion Request has been submitted.	
Tier 3	• Projects on the Planning Inspectorate's Programme of Projects (where an EIA Scoping Report has not been submitted); • Projects under the Town and Country Planning Act 1990 where an EIA Screening Request has been submitted. • Development identified in the relevant Development Plan(s) and captured within the ZoI; and • Development identified in emerging Development Plans (with appropriate weight being given as they move closer to adoption) • 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.	

4.6.26 The long list of cumulative Proposed Developments is set out within **ES Vol 2 Appendix 4-4: Long List of other 'reasonably foreseeable' developments [EN010153/DR/6.2]**. The geographical location of the long list of developments is shown on **ES Vol 3 Figure 4-1: Long List and Short List Cumulative Schemes – 10km [EN010153/DR/6.3]** (showing the full 10km search area) and **ES Vol 3 Figure 4-2: Long List and Short List Cumulative Schemes – 1km [EN010153/DR/6.3]** (showing schemes within 1km).

4.6.27 The long list was initially developed to inform the PEIR. Following the consultation period the Long List was reviewed and updated in March 2025 to inform the ES. It will be the subject of a further review and update ahead of

and during Examination to ensure the assessment remains up to date throughout the decision-making process.

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

4.6.28 Stage 2 is based upon the establishment of a shortlist of 'other developments' to be taken forward to the CEA. At Stage 2, any developments without the potential to result in cumulative impacts are excluded.

4.6.29 The shortlisting process involves the application of inclusion/exclusion criteria and is informed by the professional judgement of the environmental specialists undertaking the EIA and through engagement with the local planning authority.

4.6.30 The table contained within **ES Vol 2 Appendix 4-4: Long List of other 'reasonably foreseeable' developments [EN010153/DR/6.2]** presents the identified long list of developments within the search area and considers whether they should be included in the shortlist of cumulative developments. The decision / justification as to whether a development is to be shortlisted has been based upon:

i) **the scale of the 'other development'** - consideration of whether the scale and nature of the developments identified in the ZoI are likely to interact with the Proposed Development and result in a cumulative effect.
ii) **whether there is a temporal overlap** – whether there is overlap and any potential for interaction, or similar temporal scope during the construction and operation activities.
iii) **other relevant factors** – these might include the sensitivity of the receiving environment.

4.6.31 To assess the 'other developments' in the context of these criteria there must be a certain level of information available. The Planning Inspectorate acknowledges that the availability of information necessary to conduct the CEA will depend on the current status of the 'other existing development

and/or approved development'. It is generally the case that developments with at least an EIA Scoping Report or ES can be considered for shortlisting as they will provide detail on the likely environmental effects of the development. However, if there are non-EIA developments close to the Proposed Development which could give rise to significant cumulative effects, and there is a reasonable understanding of the likely effects arising from those developments, they can also be considered for shortlisting. In this regard the inclusion of Major Development within 1km, and other solar battery and gas peaking generation plants, ensures this requirement of PINS Advice is met.

4.6.32 CWaCC have requested approved projects within the area referred to as Protos are included in the assessment. Protos is an area allocated within the development plan for a multi-modal resource recovery park and energy under Policy EP 6 of the Cheshire West And Chester Local Plan (Part 1). Protos was granted planning permission in 2009 (at the time known as Ince Resource Recovery Park or RRP) following a planning appeal (ref. APP/Z0645/A/07/2059609). It was subsequently subject to two new permissions granted under Section 73 in 2010 (ref. 10/01488/FUL) and 2015 (ref. 14/02277/S73). The permission was granted in outline. A number of reserved matters applications were approved in 2016. Since 2016 only the access road and the soil treatment facility has been constructed under the approved reserved matters permissions, these now form part of the baseline.

4.6.33 A series of standalone planning permissions have been granted subsequently across Protos, reflecting the land uses consented under the original permission. These permissions have been included within the long list (see **ES Vol 2 Appendix 4-4: Long List of other 'reasonably foreseeable' developments [EN010153/DR/6.2]).** The wider outline Protos permission has not been included in the long list, firstly as no more reserved matters applications can now be submitted, and secondly the Proposed Developments approved under the 2016 reserved matters permissions are very unlikely to come forward given the passage of time since their approval.

4.6.34 The developments identified for shortlisting are listed in **ES Vol 2 Appendix 4-5: Short List of other 'reasonably foreseeable' developments [EN010153/DR/6.2]** along with a high-level assessment of whether they are likely to give rise to cumulative effects and identification of the topic ZoI that the development lies within.

Allocated Sites

4.6.35 A review of allocated sites within the maximum ZoI has been undertaken. An initial screening exercise was undertaken to exclude allocated sites which fell below the description provided within "Column 2 Applicable thresholds and criteria relevant screening criteria" of Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, where this information was readily available within the development plan documents.

4.6.36 A search was then undertaken to establish if any planning applications have been submitted within the identified allocated sites. These applications were reviewed to establish if they were deemed to be EIA development. For those subject to EIA, the applications were considered for the potential to give rise to likely significant cumulative effects with Frodsham Solar.

4.6.37 CWaCC requested that the following allocated sites be included in the long list.

i) EP6 – Ince Park
ii) EP5 – Thornton Science Park
iii) EP3 – Stanlow Special Policy Area

Stage 3 – Information Gathering

4.6.38 The next stage of the CEA process was to review the information relating to the other developments that have been shortlisted and establish details of their likely environmental effects. This includes but is not limited to:

i) the ZoI of environmental topics assessed;
ii) proposed design and location information;

iii) proposed programme of demolition, construction, operation and / or decommissioning; and
iv) environmental assessments that set out baseline data and effects arising from the 'other development'.
v) details of their potential or likely significant effects

Stage 4 – Assessment

4.6.39 The assessment of likely cumulative effects has then been carried out to an appropriate level of detail, commensurate with the amount of information that is available on each development proposal.

4.6.40 The findings of the assessment of cumulative effects are provided in each of the topic chapters, **ES Vol 1 Chapter 5 – 12 [EN010153/DR/6.1]**. **ES Vol 1 Chapter 13: Cumulative and Intra-Project Effects [EN010153/DR/6.1]** summarises the findings of the inter-project cumulative assessment.

In Combination (Intra-project) Effects Assessment

4.6.41 There is no established EIA methodology for assessing and quantifying intra project effects. However, there is some guidance on the topic, including the European Commissions (ECs) guidelines for assessing effect interactions[xvii]. The guidance is helpful in establishing the broad requirements for assessment. However, it does not provide a detailed assessment methods for establishing intra-project effects.

4.6.42 The primary purpose of the EIA (as reported in the ES) is to identify whether the Proposed Development has the potential to give rise to significant environmental effects (adverse or beneficial) during the construction, operation and decommissioning of the Proposed Development. However, in going through that process, the ES will also identify other beneficial or adverse residual effects that are not significant in EIA terms.

4.6.43 Where more than one residual effect on a receptor or resource has been identified, the In Combination Intra-project Effects Assessment considers the

potential for intra-project effects to arise, which may be at a greater level than each individual effect considered separately.

4.6.44 Consideration of these in-combination / intra project effects is an inherent part of the EIA assessment process for many ES topics, with the assessment of such interactions forming part of the assessment methodology e.g. ecological assessment considers the potential for noise, water quality and physical disturbance on receptors. However, other in-combination effects can arise that are not necessarily captured within those assessments.

4.6.45 The In Combination Intra-project Effects Assessment contained in ES **Vol 1 Chapter 13: Cumulative and Intra-Project Effects [EN010153/DR/6.1]** identifies the interactions that have been assessed in individual chapters of the ES and sets out the methodology used. It also provides a bespoke assessment of other effect interactions.

4.7 References

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