Great Harmeston Solar Farm

Environmental Statement

Chapter 2 EIA Scope & Methodology

Development of National Significance
Pre-Application Consultation

March 2026

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2. EIA Assessment Scope & Methodology

2.1. Introduction

2.1.1. This chapter explains the methodology used to prepare the technical chapters of this ES and describes its structure and content. In particular, it sets out the process of identifying and assessing the likely significant environmental effects of the Proposed Development, with each individual chapter of this ES stipulating its own specific assessment criteria.

2.1.2. Further details of the technical ES Chapter specific methodologies, such as survey methods, are provided in the relevant technical ES Chapter (ES Chapters 5 – 9).

2.1.3. This ES Chapter is supported by the following technical appendices:

- **Appendix 2.1 – EIA Scoping Report**
- **Appendix 2.2 – EIA Scoping Direction (awaiting)**
- **Appendix 2.3 - EIA Regulations Conformity**

2.1.4. This ES Chapter is supported by the following figures:

- **Figure 2.1 - Cumulative Sites Plan**

2.2. General Approach to Environmental Statement

2.2.1. The Environmental Statement has been prepared in accordance with The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (hereafter referred to as 'the EIA Regulations'). It must contain the information specified in Regulation 17 (3) and must meet the requirements of Regulation 17 (4). It must also include any additional information specified in Schedule 4 of the EIA Regulations which is relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.

2.2.2. **Appendix 2.3 – EIA Regulations Conformity** sets out two tables to show compliance that this ES contain the information specified in Regulation 17 and Schedule 4 of the EIA Regulations.

2.3. Scope of Environmental Impact Assessment

Methodology

Screening

2.3.1. The Applicant submitted a request for an EIA Screening Direction, issued to PEDW on the 27th August 2025 (reference: DNS CAS-04538-H9C9V8). A Screening Direction was adopted by PEDW on 3rd October 2025 (**Appendix 1.1 – EIA Screening Direction**)

confirming the application was EIA development. The red line site boundary for the ES remains the same as submitted for both the Screening Request and Scoping Request.

Scoping

2.3.2. Regulation 15 of the EIA Regulations allows an applicant who proposes to make a DNS application, to request PEDW, on behalf of the Welsh Ministers, to provide a Scoping Direction as to the scope and level of detail of the information to be provided in the Environmental Statement (the ES). Scoping is therefore an important preliminary procedure, which sets the context for the EIA process. Through scoping, the key environmental issues of concern are identified at an early stage, which permits subsequent work to concentrate on those environmental topics for which significant effects may arise as a result of a development proposed on a site. The written opinion is called an EIA Scoping Direction. The scoping request typically comprises an EIA Scoping Report provided by the applicant and setting out the information required under Regulation 14 (2) of the EIA Regulations.

2.3.3. On the 12th December 2025, the Applicant requested an EIA Scoping Direction from PEDW, on behalf of the Welsh Ministers. An **EIA Scoping Report (Appendix 2.1)** was submitted in support of a formal request for a Scoping Direction. The EIA Scoping Report described the proposed scope and methodology for the identified topics proposed to be scoped into the ES. It also described those topics which are proposed to be scoped out of the EIA process and provided justification as to why the Proposed Development would not have the potential to give rise to significant environmental effects in these topic areas.

2.3.4. Following consultation with the statutory bodies, PEDW will adopt its EIA Scoping Direction (the EIA Scoping Direction will form **Appendix 2.2** for the final ES.). The key issues raised will be summarised in the relevant technical sections of the final ES Chapters, under the subheading 'Consultation.'

2.3.5. **Table 2.1** below sets out how the key issues discussed in the Scoping Report, have been addressed within the ES and their respective locations, and summarises why environmental themes are scoped into or out of the ES.

Table 2.1 - Environmental Themes Scoped In / Out

EIA Topic	Scoped In/ Out	How/ Where addressed/ Reason for Scoping Out
Population	Scoped In	Assessed in the Socio-Economics Chapter (including Population) (**ES Chapter 9**)
Human Health	Scoped Out	No significant impacts likely and therefore scoped out of the ES. Separate technical reports including flood risk and drainage, transport and noise will

		include an assessment of construction risk which will consider human health where relevant.
Biodiversity	Scoped In	Assessed in Ecology and Biodiversity Chapter (**ES Chapter 7**)
Land	Scoped Out	No significant impacts likely and therefore scoped out of the ES. A separate agricultural circumstances technical report will be provided with the application documents.
Soil	Scoped Out	No significant impacts likely and therefore scoped out of the ES. A separate agricultural circumstances technical report will be provided with the application documents.
Water	Scoped Out	No significant impacts likely and therefore scoped out of the ES. A separate flood risk and drainage technical report will be provided with the application documents.
Air	Scoped Out	No significant impacts likely and therefore scoped out of the ES.
Climate	Scoped Out	No significant impacts likely and therefore scoped out of the ES.
Material Assets	Scoped Out	The EIA Regulations refer to 'material assets,' including cultural heritage, architectural and archaeological aspects and landscape. The term 'material assets' has a broad scope, which may include an asset of human or natural origin, valued for heritage, landscape or socioeconomic reasons. This topic will be addressed to a lesser degree in technical chapters where considered relevant. It is not considered there are any further 'material assets' to those already addressed within other EIA topics. Therefore, no separate consideration of 'material assets' is considered necessary.
Cultural Heritage including Architectural and	Scoped In	Assessed within with the Cultural Heritage & Archaeology Chapter (**ES Chapter 6**)

Archaeological aspects		
Landscape	Scoped In	Assessed in the Landscape and Visual Chapter (**ES Chapter 5**)
Risks of Major Accidents and Disasters	Scoped Out	The nature and location of the Proposed Development 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 environmental assessments.
Interrelationship between above factors	Scoped In	Assessed within each topic chapter under the heading 'Cumulative Effects' section

2.3.6. Any subsequent discussions regarding the scope of the assessment that has been undertaken separately to the EIA scoping process, is discussed within the relevant technical chapters.

2.3.7. The potentially significant environmental issues (adverse and beneficial) that were identified during the scoping process, 'scoped in' and have been addressed within technical ES Chapters are as follows:

- Chapter 5 - Landscape and Visual;
- Chapter 6 – Cultural Heritage and Archaeology;
- Chapter 7 – Ecology;
- Chapter 8 - Glint and Glare; and
- Chapter 9 – Socio-Economics.

2.3.8. The Scoping Report suggests that the following technical disciplines can be scoped out of the ES:

[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."

- Human Health;
- Land;
- Soil;
- Water Environment;
- Air Quality;
- Climate;
- Noise and Vibration;
- Risk of Major Accidents and Disasters;
- Material Assets;
- Traffic and Transport; and
- Waste

2.4. Environmental Impact Assessment Methodology

Approach to Technical Studies

2.4.1. The content of the ES is based on the following:

- Review of the baseline situation through existing information, including data, reports, site surveys and desktop studies undertaken to date;
- Consideration of the relevant National Planning Policy, Local Planning Policy and relevant technical and good practice guidance;
- Consideration of potential sensitive receptors;
- Identification of likely significant environmental effects and an evaluation of their duration and magnitude;
- Expert opinion and knowledge;
- Modelling (if required); and
- Specific consultations with appropriate bodies.

2.4.2. Each ES 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 ES Chapter has been considered by a specialist in that area, with the findings of the baseline

environmental assessments feeding into the environmental constraints and opportunities site design.

2.4.3. The design of the Proposed Development has been an iterative process, based on environmental assessments and consultation with statutory and non-statutory consultees, including local residents. Environmental assessments have progressed and been amended to incorporate further mitigation within the design of the Proposed Development over time.

2.4.4. 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.

Proposed Development Stages

2.4.1. The Applicant is applying for a temporary development of 40 years, therefore this EIA focuses on the potential likely significant effects of the construction, operational and decommissioning phases of the Proposed Development.

2.5. Structure of Technical Chapters

2.5.1. Throughout the EIA process, the likely significant environmental effects of the Proposed Development will be assessed. The information which will inform the EIA process has generally been set out in the following way:

- **Introduction** – to introduce the topic under consideration, state the purpose of undertaking the assessment and set out those aspects of the Proposed Development material to the topic assessment;
- **Assessment Approach** – to describe the method and scope of the assessment undertaken with regard to policies of relevance 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;
- **Assessment of Likely Significant Effects** - identifying the likely effects, evaluation of those effects and assessment of their significance, considering construction, operational and decommissioning, and direct and indirect effects;
- **Mitigation, Enhancement and Residual Effects**- describing the mitigation strategies for the significant effects identified and noting any residual effects of the proposals;
- **Cumulative** - consideration of potential cumulative and in-combination effects with those of other relevant developments; and

- **Summary** – a non-technical summary of the chapter, including baseline conditions, likely significant effects, mitigation and conclusion.

2.5.2. Figures and appendices are referenced by chapter number prefix followed by the order of appendices/ figures numbered consecutively. Figures are included in ES Volume 1, and appendices in ES Volume 2. **Chapter 0: Contents and Statement of Competence** sets out the list of figure/ appendix numbers.

2.6. Determining Baseline Conditions

2.6.1. The existing and likely future environmental conditions in the absence of the Proposed Development are known as 'baseline conditions.' Each ES Chapter includes a description of the current (baseline) environmental conditions. The baseline conditions within the Site red line boundary and within the surrounding study area form the basis of the assessment, against which the likely significant effects are assessed.

2.6.2. Consideration has been given as to how the baseline conditions would evolve in the absence of the Proposed Development, known as the 'future baseline.'

2.6.3. The consideration of future baseline conditions has also taken into account the likely effects of climate change, as far as these are known at the time of writing. This has been based on information available from the UK Climate Projections project, developed by the Met Office and Environment Agency[2] which provides information on plausible changes in climate for the UK.

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

- Online / digital resources (desk studies);
- Data searches e.g. Historic Environment Record;
- Stakeholder engagement;
- Baseline site surveys; and
- Modelling.

2.6.5. ES Chapter authors have also considered other factors relevant to identification of future baseline conditions, such as trends in population size of protected species.

2.6.6. The full results from all baseline data collection and surveys are described within the technical ES Chapters 5-9 of the ES with accompanying appendices/ figures to support, as well as any limitations and assumptions with the data.

[2] Met Office (2018) UK Climate Projections (UKCP)

2.6.7. Site visits and survey work have been undertaken for the scoped in technical disciplines in 2024, 2025 and 2026 including:

- Ecology extended Phase I habitat survey, badger survey, breeding bird surveys, bat activity surveys, Great Crested Newt (GCN) in 2024 with follow up Phase I habitat survey visit in 2025. Non-breeding wintering bird surveys were undertaken in 2024 / 2025. Otter and water vole survey in 2026; follow-up habitat survey in 2026.
- Heritage site visit and walkover of the Scoping boundary in 2025; and
- Two-day site visit in 2025 to verify extent of SZTV, determine the relationship of the landscape associated with the Site with its surroundings and ascertain the visibility of the Site from the identified sensitive receptors and other publicly accessible locations within the wider landscape. Site photography in 2025 and 2026.

Spatial Scope

2.6.8. Spatially, the area over which effects could occur may be wider than the Site red line boundary. The appropriate study area has been determined for each environmental topic and set out in each technical ES Chapter 5-9 of the ES, and allows for assessment of indirect as well as direct effects, together with off-site factors, where relevant. These take account of the geographic scope of the potential impacts relevant to that topic and/or of the information required to assess the impacts. The study area for each environmental topic incorporates the Site red line boundary as a minimum for the Proposed Development. The study area is also used to inform the assessment of cumulative effects within each technical ES Chapter.

Temporal Scope

2.6.9. Specific temporal periods are defined for the assessment of baseline conditions and the impacts of the Proposed Development. In doing so, consideration has been given to the worst-case durations of construction, operational and decommissioning activities. Where relevant, consideration has been given to the duration it could take for environmental design measures to become established and effective. Timeframes for which mitigation measures are likely to have achieved their desired outcome have been defined within this ES.

2.6.10. Timescales associated with these enduring effects in all phases generally are as follows:

- Short term – a period of months to a few years (usually associated with the construction and decommissioning phases);
- Medium term – period associated with the operational phase; and
- Long term – a period of many years, with the potential for permanent impacts beyond the operational phase.

2.6.11. If there is any variation with the above time periods, then this is set out within the respective ES Chapter.

Construction Phase

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

Operational Phase

2.6.13. Operational effects are the effects that are associated with operational and maintenance activities during the generating lifetime of the Proposed Development. This includes the effects of the physical presence of the Proposed Development, and its operation, use and maintenance.

Decommissioning Phase

2.6.14. Decommissioning effects are changes resulting from activities beginning and ending during the decommissioning stage. This covers effects related to decommissioning the Proposed Development such as decommissioning site traffic, noise and vibration from decommissioning activities, dust generation, site runoff, mud on roads, risk of fuel / oil spillage, and the visual intrusion of plant and machinery on site. Typically, decommissioning phase effects are similar in nature to the construction phase, although may be of shorter duration and of lower intensity.

2.6.15. Decommissioning phase effects are set out and assessed separately to construction and operation phase effects in each of the ES Chapters. In some cases, given the inherent uncertainty on the scope of decommissioning activities and the relevant environmental conditions prevalent at the time, the Chapter will provide a concise assessment explaining that the effects during decommissioning are expected to be less than or the same as those predicted during construction which is considered to be a conservative and suitably precautionary assumption.

Assessment Years

2.6.16. The approach to assessment has incorporated the use of identified assessment years to allow for preliminary evaluation of the likely effects during the phases of the Proposed Development. The following assessment years have been used to inform this ES:

- Existing Baseline (2026) – this is the principal baseline against which environmental effects will be assessed in which the baseline studies for the EIA are being undertaken;

- Future baseline (Without the Proposed Development) in 2026-2027 (construction phase), 2027-2067 (operational phase) and 2067 (decommissioning phase) is set out for each topic, where needed, within the respective chapter. These assessment years are explained below;

- Construction (2026-2027) (With the Proposed Development): - The length of the construction programme for the purposes of the EIA is anticipated to be up to 1 year (approximately 9-month period) in an unphased approach;

- Operation (2027-2067) (With the Proposed Development): - This assumes that the Scheme will be operational during the latter part of 2027 and is determined by the timeframe National Grid has stated within their Grid Offer;

- Decommissioning (2067)– It is proposed that the Proposed Development will be decommissioned after 40 years of operation. Decommissioning will take up to 1 year (approximately 9-month period).

2.7. Determining Significance

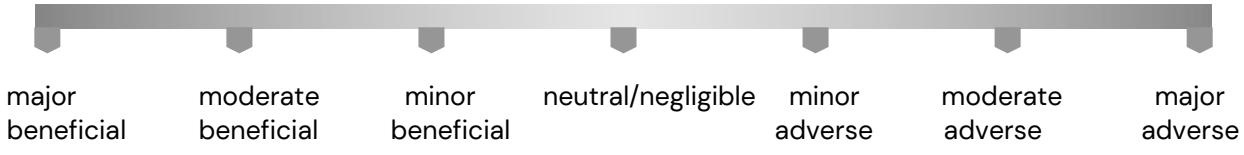
2.7.1. The purpose of the EIA is to identify the likely 'significance' of environmental effects (beneficial or adverse) arising from a Proposed Development. Each technical ES Chapter defines discipline specific 'likely significant effects' by the use of pre-determined assessment criteria. Individual disciplines stipulate the specific assessment criteria used within their own technical chapters under Assessment Approach, however, in broad terms, environmental effects are described as:

- Adverse – detrimental or negative effects to an environmental resource or receptor;

- Beneficial – advantageous or positive effect to an environmental resource or receptor;

- Neutral/Negligible – a neutral effect to an environmental resource or receptor.

2.7.2. 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:



2.7.3. 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.

2.7.4. The broad criteria for determining magnitude are set out in **Table 2.2**.

Table 2.2: 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.

2.7.5. The sensitivity of a receptor is based on the relative importance of the receptor using the scale in **Table 2.3.**

Table 2.3 - Degrees of Sensitivity and their Criteria

Sensitivity	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.

2.7.6. Additionally, the reversibility of the effect, being either reversible or irreversible and the likelihood of the effect occurring, based on a scale of certain, likely or unlikely is considered to enable identifying the likely 'significance' of environmental effects.

2.7.7. 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 2.4**, whereby effects assigned a rating of 'Major' or 'Moderate' would be considered as 'Significant' in EIA terms.

2.7.8. To determine the degree of significance (i.e. interaction of the receptor's sensitivity and the magnitude of change likely to be experienced), an example of this 'matrix' process is indicated below in **Table 2.4**, however it should be noted that this is provided as a general guide only.

Table 2.4 - 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

2.7.9. The above magnitude and significance criteria are provided as a guide for specialists to categorise the significance of effects within the ES. Discipline-specific methodology is often used rather than generic criteria, as it is recognised that broad criteria does not always cater for particular disciplines, particularly where best practice and guidance require subtle differences. Where discipline-specific methodology has been applied that differs from the generic criteria above, this is clearly explained within the given chapter under the heading of 'Assessment Approach'.

2.7.10. As can be seen from **Table 2.4** when an environmental effect is assessed as having a major or moderate degree of significance it is deemed to be 'Significant' These are the shaded cells in **Table 2.4.** There is no statutory definition of what level of effect is to be regarded as 'Significant and there is often not a single, definitive, correct answer as to whether an effect is significant or not.

2.7.11. When such a significant effect occurs consideration of additional mitigation solutions or enhancements to minimise the effect (which can include design alterations) will be considered. Mitigation by Design (embedded mitigation) should be considered as part of the initial 'Assessment of Likely Effects' within ES Technical Chapters.

2.7.12. Once these mitigations and enhancements have been assessed the degree of significance may decrease to minor/moderate, minor or negligible ('Not Significant'). If such a level of environmental effect occurs the Proposed Development is no longer considered as creating a "significant effect." If an environmental effect remains 'Significant' (i.e. major/moderate) the determining authority must consider these significant effects in the planning balance to be carried out in determining the application. Significant negative environmental effects will form adverse impacts, and significant positive environmental effects will form benefits, of which both are respectively to be weighed up in the planning balance.

2.7.13. Significance of effects would be assigned both before and after mitigation where relevant (i.e. the residual effect following additional mitigation).

2.7.14. Throughout the ES, assessments made present reasoning behind each of the judgements made so that the readers of the ES can see the weight attached to the different factors and can understand the rationale of conclusions reached. This ensures that the process for determining the significance of effects is transparent and clearly communicated.

2.8. Mitigation

2.8.1. Standard measures and the adoption of construction best practice methods to avoid, minimise or manage adverse environmental effects, or to ensure realisation of beneficial

effects, are assumed to have been incorporated into the design of the Proposed Development and the methods of its construction from the outset.

2.8.2. The development of mitigation measures is part of the iterative EIA process. Where the assessment of the Proposed Development 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 subject to appropriate planning conditions or obligations.

2.8.3. The Proposed Development has had several embedded mitigation measures incorporated into the concept design to avoid or minimise environmental impacts. In some cases, these measures result in enhancement of environmental conditions.

2.8.4. 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 judgment has been introduced to support these assumptions.

2.8.5. The ES Technical Chapters included within this ES consider the following mitigation types:

- Mitigation by Design (embedded mitigation) measures: included as part of the Proposed Development design. This type of mitigation describes efforts undertaken to prevent or reduce potential significant adverse effects by iteratively altering design throughout the evolution of the Proposed Development. This is mitigation that would inherently be delivered and is therefore considered to form part of the Proposed Development and has been considered in the assessment of effects of the EIA;

- Additional Mitigation Measures: proposed to avoid effects occurring or to minimise environmental effects and are not included within the design. Generally this takes the forms of mitigation measures detailed within relevant Management Plans such as a Construction Traffic Management Plan;

- Enhancement Measures: proposed that bring additional benefits to the Proposed Development but are not necessary to make the Proposed Development acceptable;

- Standard measures and the adoption of construction best practice methods to avoid, minimise or manage adverse environmental effects, or to ensure realisation of beneficial effects, are assumed to have been incorporated into the design of the Proposed Development and the methods of its construction from the outset.

2.9. Residual Effects

2.9.1. Once additional mitigation measures are identified, effects are re-assessed taking account of the proposed mitigation applied and to provide the residual effects i.e., the overall likely effects of the Proposed Development. This approach allows for all deliverable and committed mitigation to be considered in determining the significance of effects reported in this ES.

2.9.2. In some instances where ES Topic Chapters have considered Outline Management Plans as embedded mitigation, the 'Residual Effects' assessment will be the same as the initial 'Assessment of Likely Effects' and may not be repeated. This will be clearly detailed within ES Topic Chapter if this is the case.

2.10. Cumulative and In-Combination Effects

Cumulative Effects (Inter-project)

2.10.1. Within EIA, cumulative effects are generally considered to arise from the combination of effects from the Proposed Development and from other proposed or permitted schemes in the vicinity, acting together to generate elevated levels of effects. Examples of these kinds of effects that can be readily appreciated could include:

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

2.10.2. These types of cumulative effects can be known as 'Inter-project Cumulative Effects' i.e. the combined effects of development schemes which may, on an individual basis be insignificant but, cumulatively, have significant effect.

2.10.3. With respect to inter-project cumulative effects, the EIA Regulations state that consideration should be given to:

"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;" (Schedule 4, paragraph 5(e))

2.10.4. This is generally in relation to inter-project cumulative effects with schemes built or under construction or with planning permission. However, it is proposed to also include projects that are currently awaiting determination within the cumulative assessment as there is a possibility that these projects could be approved whilst the application for the Proposed Development is being determined.

<u>Methodology</u>

2.10.5. There are no legislative or policy requirements which set out how a cumulative effects assessment should be undertaken.

2.10.6. It should be noted that the extent to which any developments need to be considered within each environmental discipline will inevitably vary depending on their nature, their proximity to the Site and their stage in the planning process.

2.10.7. It is also acknowledged that there may be other proposals which are considered as "reasonably foreseeable" as referred to within the European Guidance[3] in relation to the definition of cumulative effects. It is important to recognise that it is not the role of the ES to assess all these types of potential developments and a staged approach in identifying which of these 'other sites' are relevant to consider is appropriate.

2.10.8. The level of assessment detail has been dependent on the information available for each of these schemes and may be undertaken in a qualitative or quantitative manner as appropriate. Each technical chapter includes a summary of the relevant cumulative and interactive effects where relevant.

2.10.9. Often the presence of operational schemes (and for some disciplines, schemes that are under construction, but not yet operational) is an established influence upon the environment, that will be considered when determining the future baseline for the non-cumulative assessment for each ES Technical Chapter. The non-cumulative assessment of effects will have full regard to the presence of such schemes when arriving at any conclusions.

2.10.10. Spatial considerations and scale of development criteria have been developed based on professional judgement to determine whether cumulative schemes have the potential for inter-project cumulative effects broadly when combined with the Proposed Development's effects. The general criteria applied to the cumulative schemes is as follows:

- Committed schemes (i.e. proposals with planning permission/consented which are either under construction or yet to commence);
- Applications pending determination (i.e. schemes with live planning applications which may or may not be within adopted allocations);
- Other potential schemes (e.g. adopted allocation or schemes which have screening / scoping submitted – some of these maybe considered relevant to include in cumulative assessment).
- located within 3 km of the redline boundary of the Site; and
- Identified as Major Projects.

2.10.11. Major application projects are developments that are one or more of the following:

"a) the winning and working of minerals or the use of land for mineral-working deposits;

(b) waste development;

[3] Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Commission 1999).

(c) the provision of dwellinghouses where—

(i) the number of dwellinghouses to be provided is 10 or more; or

(ii) the development is to be carried out on a site having an area of 0.5 hectares or more and it is not known whether the development falls within sub-paragraph (c)(i);

(d) the provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more; or

(e) development carried out on a site having an area of 1 hectare or more."[4]

2.10.1. Each potential cumulative scheme has been considered in relation to how certain the development is in coming forward as per UK Planning Inspectorate (PINS) 2024 – Guidance. Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment; although specific to Nationally Significant Infrastructure Projects, is also of relevance to the best practice approach of cumulative effects assessment in DNS Applications.

2.10.2. The following categories of certainty levels include:

- 'certain' (development under construction),
- 'likely' (permitted applications not under construction),
- 'potential' (undetermined applications which are identified in relevant local plan), or
- 'uncertain' (undetermined applications with no other status).

2.10.3. The assessment determines whether certainty levels may influence the baseline or have the potential for significant inter-project cumulative effects with the Proposed Development; thus, identifying what 'other developments' are considered appropriate to consider in any cumulative scenario within the resultant ES. This review is set out in **Table 2.5** below and illustrated on **Figure 2.1 Cumulative Sites Plan**.

[4] The Town and Country Planning (Development Management Procedure) (Wales) Order 2012

Table 2.5 - List of Schemes to be considered in the assessment of Cumulative effects

Number	Planning Ref	Address	Status	Distance from site (km)	Bearing
1	10/0038/PA	Castle Pill Farm, Castle Pill Road, Steynton	Operational	2.13	1.9
2	10/1272/PA	Steynton C+F	Operational	2.16	5.3
3	11/0831/PA / 12/1149/PA	Lower Scoveston Farm	Operational	2.05	19.5
4	11/0166/PA	Lower Solbury Farm, WALWYNS CASTLE	Operational	2.85	130.7
5	11/0166/PA	Lower Solbury Farm, WALWYNS CASTLE	Operational	2.75	131.6
6	12/0363/PA	South East of Solbury Farm	Operational	2.19	130.9
7	12/0363/PA	South East of Solbury Farm	Operational	1.96	143.6

8	11/0878/PA	Norton Farm, Rosemarket	Operational	1.85	319.5
9	13/0047/PA	Harmeston Farm, Steynton	Operational	0.00	90.0
10	13/0222/PA	Scoveston Park, Scoveston, Milford Haven	Operational	1.66	21.5
11	14/1045/PA	Scoveston Park,Steynton, Milford Haven	Operational	1.75	14.0
12	15/0457/PA	Upper Dredgeman Hill Farm, Merlins Bridge, Haverfordwest	Operational	2.83	194.0
13	12/1206/PA	Lawrence Landfill	Operational	2.58	191.1
14	12/1206/PA	Lawrence Landfill	Operational	2.58	186.8
15	05/1292/PA	Steynton 1	Operational	1.72	33.8
16	05/0394/PA	Steynton 2	Operational	1.94	28.2
17	07/1567/PA	Steynton 3	Operational	2.50	21.3
18	10/0946/PA	RO Vine Cottage, Blackbridge	Operational	2.70	26.9

19	SC/0846/12	The Byre, Woodson	Screening Opinion	1.30	95.6
20	SC/0987/12	Land south of New House Farm,	Screening Opinion	2.72	168.8
21	SC/0020/13	Bolton Hill Quarry, Tiers	Screening Opinion	0.87	183.6
22	SC/0089/13	Bolton Hill Quarry, Tiers Cross	Screening Opinion	2.35	239.3
23	SC/0200/13	Meadow View, Leonardston Road, Llanstadwell, Milford Haven	Screening Opinion	2.42	334.5
24	SC/0260/PA	Hayston Farm, Johnston	Screening Opinion	0.38	26.3
25	SC/0350/13	Land to the west of Great Westfield Farm, Thurston Lane, Sardis	Screening Opinion	2.40	283.3
26	SC/0377/12	Steynton Farm, Thornton Road, Steynton	Screening Opinion	1.00	38.9

27	SC/0093/11	Lower Scoveston Farm	Screening Opinion	2.01	21.4
28	SC/0471/14	Land at Hayston Farm north of Neyland Road, Neyland	Screening Opinion	0.38	26.3
29	SO/0667/15	Tierson, Lower Thornton, Milford Haven	Screening Opinion	0.63	82.6
30	SC/0037/17	Lower Scoveston Farm,Scoveston Road, SCOVESTON, Milford Haven	Screening Opinion	2.13	337.3
31	SO/0285/17	Land adjoining Milford Haven Refinery, Robeston West	Screening Opinion	2.16	85.8
32	SO/0109/21	Bolton Hill WTW	Screening Opinion	0.81	180.3
33	13/0527/PA	Barretts Hill, Neyland Road, Steynton	Appeal Dismissed	0.64	49.1
34	14/0390/PA	Land at Jordonston Farm, Milford Haven	Appeal Dismissed	1.31	312.0

35	14/0410/PA	Woodson, Lower Thornton, Milford Haven	Appeal Dismissed	1.30	94.7
36	10/0322/PA	Copy Bush Farm, Waterston	Expired Approval	2.75	10.7
37	12/1068/PA	Land to the South West of upper dredgeman hill farm, Merlins Bridge	Refused	2.85	193.7
38	12/1151/PA	Rose Cottage	Refused	1.52	97.0
39	13/0545/PA	Studdolph Hall, Steynton	Refused	0.45	97.9
40	14/0412/PA	Rose Cottage Farm, Robetston West, Milford Haven	Refused	1.52	96.6
41	13/0117/PA	Barretts Hill, Neyland Road, Steynton	Withdrawn	0.80	38.3

2.10.4. The list of developments in Table 2.5 has been identified by Pegasus Group and Pembrokeshire County Council and has the potential to give rise to significant cumulative environmental effects in conjunction within the Proposed Development.

2.10.5. If certain cumulative schemes have been scoped out of technical disciplines i.e., for the LVIA chapter the physical distance between sites causes no in-combination visibility, this will be explained within individual chapters.

2.10.6. It is envisaged that the Proposed Development, once registered and validated would be also considered as a potential cumulative development for any future planning applications coming forward. The approach described above is considered to provide a robust assessment in line with the EIA Regulations.

In-Combination Effects (Intra-Project)

2.10.7. There are no legislative or policy requirements which set out how an intra-project cumulative impact assessment should be undertaken. Within this ES intra-project cumulative effects considers the combined effect of individual effects (for example noise, airborne dust or traffic) on a single receptor where deemed potentially significant (referred to as "in-combination" in the Design Manual for Roads and Bridges (DMRB) Volume 11 Environmental Assessment).

2.10.8. In-combination effects arise where effects from one environmental element bring about changes in another environmental element. Examples of types of interactive effects may include:

- Effects of traffic on noise;
- Effects of traffic on air quality;
- Effects of water discharges on ecology;
- Effects of landscaping on ecology.
- Effects of waste on traffic; and
- Effects of land contamination on air and water quality.

2.10.9. The potential for such effects is reviewed in the technical chapters of the ES.

2.10.10. There is no established EIA methodology for assessing and quantifying the intra-project cumulative effects of individual effects on sensitive receptors. Pegasus Group have developed an approach which uses the defined residual effects of the proposed development to determine the potential for effect interactions and so the potential for intra-project effects.

2.10.11. Guidance prepared by Hyder Consulting for the European Commission[5] defines effect interactions, differentiating them from cumulative effects between the Proposed Development and other developments, and provides some high-level guidance on how the results of the assessment should be presented. The assessment methodology presented below is based on this high-level guidance with professional judgement applied to inform the details of the methodology.

2.10.12. The approach to assessing effect interactions has followed a three-stage process, as outlined in the following paragraphs.

Stage 1- Topic-specific Assessment of Likely Significant Effects

2.10.13. The Assessment of Likely Significant Effects is presented in each of the individual environmental topic chapters and comprises the individual assessments of residual effects on receptors across the construction and operational phases of the Proposed Development. The mitigation by design, additional mitigation and enhancements proposed in technical chapters is assumed to be implemented before consideration of the in-combination cumulative effects. Therefore, residual effects identified in the technical chapters of this ES have been considered.

Stage 2- Identification of Receptors

2.10.14. Stage 2 identifies 'receptor groups/ receiving environs' found within the technical chapters that require further assessment for in-combination effects. Not every individual receptor group/ receiving environ assessed within technical chapters is assessed, but rather potentially sensitive 'receptor groups' are identified through the EIA process. Only receptors that are expected to incur more than one potential effect have been included in the assessment.

2.10.15. Receptors predicted to be affected by only a single effect are excluded because there is considered to be no potential for in-combination effects to take place. It should be noted that uncertainty in the assessment of effects, for most of the technical chapters in this ES, is dealt with by making conservative, or worst-case, assumptions.

Stage 3- In-Combination Effect Assessment

2.10.16. An assessment is made of the potential for in-combination effects to arise for identified receptor groups for the construction and operational phases of the Proposed Development. This involves the assessment of the scope for all effects to interact, spatially and temporally, to create intra-project effects on a receptor group/ receiving environ.

2.10.17. Where the in-combination (intra-project) effects of the Proposed Development would likely lead to a change in the significance of effects at a receptor group, when compared

[5] Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, Hyder Consulting UK Limited, 1999

with considering these impacts in isolation, the in-combination effect would be determined as Significant.

2.10.18. Where the in-combination (intra-project) effects of the Proposed Development are likely to not lead to a change in the significance of effects at a receptor group, when compared with considering these impacts in isolation, the in-combination (intra-project) effect would be determined as Not Significant.

2.10.19. It should be noted that only residual effects that are minor, moderate or major in scale have been considered within this assessment, as negligible effects are, by definition, imperceptible in their nature.

2.10.20. Where there is more than one effect likely to arise on a particular receptor group/ receiving environ, the potential for effect interactions and the scale of the combined effect have been determined based on professional judgement and experience.

2.10.21. Each discipline, where relevant, has explained within their chapters when/where such effects exist and how they have been assessed.

2.11. Consideration of Alternatives

2.11.1. Regulation 17 (3)(d) of the EIA Regulations requires that the ES contain:

'a description of the reasonable alternatives studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment'.

2.11.2. Additionally, paragraph 2 of Schedule 4 of the EIA Regulations requires that the ES contain:

'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.'

2.11.3. Accordingly, this ES contains a section within **Chapter 4: Proposed Development and Alternatives** setting out the main alternatives to the Proposed Development that have been considered and the reasons for selecting the chosen option. This includes consideration of the 'no development scenario', alternative locations, designs and technologies.

2.12. General Assumptions and Limitations

2.12.1. The principal assumptions that have been made and any limitations that have been identified in preparing this ES are set out below:

- Assessments are based on the Proposed Development description and anticipated construction methodology set out in **Chapter 4: Proposed Development and Alternatives**, and therefore the 'worse case' scenario is assessed within the parameters set out in the ES.

- All of the principal land uses adjoining the Application Site remain as present day, except where development proposals have been granted planning consent. In those cases, it is assumed the development proposals will be implemented or would but for the development being implemented;

- Information received from third parties is complete and up to date;

- The design, construction and completed stages of the Proposed Development will satisfy legislative requirements; and

- Conditions or other legal obligations will be attached to the planning permission with regards to "mitigation", where considered necessary to make the development acceptable.

2.12.2. The assessments carried out in the ES were conducted in an open, objective, and neutral manner, giving equal consideration to both beneficial and adverse effects as necessary. Where feasible, this was grounded on quantitative and accepted standards, along with the application of professional judgments and expert interpretations.

2.12.3. Technical studies have been explicit in recognising areas of limitation within the ES and any challenges that have been faced, including the assumptions that the evaluations are based on. As required, assessment of likely significance effect criteria have been assigned to provide a determination of the likelihood of an effect happening.