

Light Valley Solar

Environmental Statement Volume 1

Chapter 7: Climate Change Resilience

Document Reference: EN0110012APP/LVS/06.01.07

February 2026

Planning Inspectorate Reference: EN0110012
APFP Regulation: 5(2)(a)



Light Valley
Solar

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Light Valley Solar

DCO Submission

Chapter 7: Climate Change Resilience

Regulation Reference	APFP Regulation 5(2)(a)
Planning Inspectorate Case Reference	EN0110012
Application Document Reference	EN0110012/APP/LVS/06.01.07
Author	Light Valley Solar Limited

Version	Date	Status of Version
1.0	February 2026	DCO Submission

Contents

7	Climate change resilience	1
7.1	Introduction	1
7.2	Scope of the assessment	1
7.3	Relevant legislation, policy, standards and guidance	2
7.4	Stakeholder engagement and consultation	6
7.5	Methodology	9
7.6	Assumptions and limitations	12
7.7	Baseline conditions	13
7.8	Embedded and good practice mitigation and enhancement measures	15
7.9	Assessment of likely impacts and effects	21
7.10	Additional mitigation	22
7.11	Residual effects	22
7.12	Monitoring	22
7.13	Summary	23
7.14	Cumulative assessment	26
	References	27

List of tables

Table 7-1	Climate change resilience assessment scope	2
Table 7-2	Climate change resilience - Legislation	3
Table 7-3	Climate change resilience - Policy	3
Table 7-4	Climate change resilience - standards and guidance	5
Table 7-5	Climate change resilience – EIA Scoping Opinion comments	6
Table 7-6	Targeted consultation comments	8
Table 7-7	Qualitative four-point scale of likelihood of hazard impact.	11
Table 7-8	Qualitative four-point scale of consequence of hazard impact.	12
Table 7-9	Significance scoring matrix	12
Table 7-10	Baseline and projection data for climate metrics*	14
Table 7-11	Climate change resilience - assessment summary	24

7 Climate change resilience

7.1 Introduction

7.1.1 This chapter assesses the likely significant effects arising from future climate change on the Proposed Development. This assessment considers operation (including maintenance) and decommissioning only. The construction stage has been scoped out of the assessment as per the conclusions of the EIA Scoping Report.

7.1.2 This chapter sets out the relevant legislation, policy, standards and guidance applied to the assessment process; consultation undertaken to inform the assessment; assessment methodology; the relevant baseline conditions upon which the assessment is based; embedded mitigation considered in place before the assessment is undertaken; the likely significant effects that may arise as a result of projected climatic changes on the Proposed Development considering embedded mitigation; further mitigation requirements to reduce or remove any identified likely significant effects; the remaining residual effects following further mitigation; and any monitoring required for remaining significant effects.

7.1.3 The conclusions of the following topic assessments are considered relevant to the receptors considered within this assessment, and as such are taken into account in the overall assessment for climate change resilience:

- 1) Chapter 6: Biodiversity (ES Volume 1) [**EN00110012/APP/LVS/ 06.01.06**]
- 2) Chapter 15: Water Resources and Flood Risk (ES Volume 1) [**EN00110012/APP/LVS/ 06.01.15**]
- 3) Appendix 15.1: Flood Risk Assessment (ES Volume 3) [**EN00110012/APP/LVS/06.03.15.01**]
- 4) Appendix 15.4: Outline Drainage Strategy (ES Volume 3) [**EN00110012/APP/LVS/06.03.15.04**]
- 5) Appendix 16.2: Preliminary Risk Assessment (PRA) (ES Volume 3) [**EN00110012/APP/LVS/06.03.16.03**]

7.1.4 This chapter is supported by the following figures (ES Volume 2):

- 1) Figure 7.1: Grid Cells for UKCP18 Climate Data [**EN00110012/APP/LVS/06.02.07.01**]

7.1.5 This chapter is supported by the following appendices (ES Volume 3):

- 1) Appendix 7.1: Climate Change Resilience Assessment [**EN00110012/APP/LVS/06.03.07.01**]

7.2 Scope of the assessment

7.2.1 The EIA Scoping Report (see Appendix 1.1 (ES Volume 3) [**EN00110012/APP/LVS/06.03.01.01**]) set out the proposed scope for the

assessment of climate change resilience (CCR). The scope of the CCR assessment is summarised in Table 7-1 below.

Table 7-1 Climate change resilience assessment scope

Aspect	Phase	Scoped in / out	Summary comments (including justification and any assumptions relied upon for scoping out aspects)
Climate change resilience (CCR)	Construction	Scoped out	Climate change is not expected to be so significant within the construction stage timescales as to require additional mitigation beyond current best practice.
	Operation	Scoped in	N/A
	Decommissioning	Scoped in	N/A
In-combination climate change impacts (ICCI)	All phases	Scoped out	ICCI was scoped out for all stages as the projected changes in climate in-combination with the Proposed Development are not expected to have a significant impact upon environmental receptors identified by other topic disciplines.

Study Area

- 7.2.2 The Study Area for the CCR assessment is the Order Limits, as set out in Figure 1.1: Site Location Plan and Order Limits (ES Volume 2) **[EN00110012/APP/LVS/06.02.01.01]**.
- 7.2.3 The receptors assessed are the Proposed Development itself, including proposed infrastructure, assets and human health receptors. Further detail is provided within Section 7.5 below.
- 7.2.4 Climate change projection data is available for grid cells across the UK. The key areas of the Proposed Development are covered by three of the 12km grid cells. Data was taken from the grid cells where the existing Monk Fryston National Grid substation is located and due to proximity to the other cells, it is likely to be representative of the future changes to climate for the whole Proposed Development. The assessment includes all relevant potential climate hazards associated with Solar Development Sites 1-4 and 6-8, the Cable Route Corridors and the Solar Development Site 8 Access Area. Climate risks are assessed for the operation and decommissioning stages only.

7.3 Relevant legislation, policy, standards and guidance

- 7.3.1 The following section identifies the relevant legislation, planning policy, standards and guidelines which underpin the assessment methodology for CCR and have informed the assessment, including the identification of mitigation.

7.3.2 Climate resilience policy is typically incorporated into the same policy documents and structures as with GHG emissions policy, therefore this section should be read in conjunction with section 9.3 of Chapter 9: Greenhouse Gas Emissions (ES Volume 1) [EN0110012/APP/LVS/06.01.09].

Legislation

Table 7-2 Climate change resilience - Legislation

Legislation	Relevance to assessment
The Climate Change Act 2008 (Ref 1)	<p>The UK legislative basis to address climate change. It sets the requirement for a national adaptation programme and associated publication of a national climate change risk assessment every five years. The Climate Change Act provides the policy framework to promote climate change adaptation action in the UK.</p> <p>The UK Adaptation Reporting Power grants the Secretary of State the power to require public service organisations to produce reports on what they are doing to adapt to climate change.</p> <p>This chapter provides a climate change risk assessment for the Proposed Development.</p>
Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 2)	<p>The regulations require:</p> <p><i>“5. A description of the likely significant effects of the development on the environment resulting from, inter alia—</i></p> <p><i>(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change”</i></p> <p>This chapter provides a climate change risk assessment for the Proposed Development.</p>

Policy

Table 7-3 Climate change resilience - Policy

Policy	Relevance to assessment
Overarching National Policy Statement for Energy (EN-1), 2025 (Ref 3)	<p>Sets broad national policy approach. Section 4.10 addresses climate change; outlining the generic considerations that applicants should consider in order to ensure that electricity networks infrastructure is resilient to the effects of climate change.</p> <p>Paragraphs 4.10.5 to 4.10.12 relate to the Applicant’s assessment and Paragraphs 4.10.13 to 4.10.19 relate to the Secretary of State’s decision-making regarding adaptation measures and resilience in response to climate projections.</p> <p>Paragraph 4.10.8 states that:</p> <p><i>“...applicants must consider the direct (e.g. site flooding, limited water availability, storms, heatwave and wildfire threats to infrastructure and operations) and indirect (e.g. access roads or other critical dependencies impacted by flooding, storms, heatwaves or wildfires) impacts of climate change when planning</i></p>

Policy	Relevance to assessment
	<p><i>the location, design, build, operation and, where appropriate, decommissioning of new energy infrastructure.”</i></p> <p>This chapter provides a climate change risk assessment for the Proposed Development, considering the direct and indirect impacts of climate change.</p>
<p>National Policy Statement for Renewable Energy Infrastructure (EN-3), 2025 (Ref 4)</p>	<p>Establishes policy specific to renewable energy schemes, including solar in Section 2.10. EN-3 aims to streamline the consenting process for large-scale solar developments by allowing decisions on solar applications to be made under section 104 of the Planning Act 2008. Solar energy is considered low carbon infrastructure and crucial for achieving net-zero goals, therefore designated Critical National Priority infrastructure under 2.17, 2.18, and Section 3.</p> <p>Paragraph 2.4.11 states that:</p> <p><i>“Solar photovoltaic (PV) sites may also be proposed in low lying exposed sites. For these proposals, applicants should consider, in particular, how plant will be resilient to:</i></p> <ul style="list-style-type: none"> • <i>increased risk of flooding; and</i> • <i>impact of higher temperatures.”</i> <p>This chapter provides a climate change risk assessment for the Proposed Development, considering both precipitation and temperature changes as per UK Climate Projections 18 (UKCP18).</p>
<p>National Policy Statement for Electricity Networks Infrastructure (EN-5), 2025 (Ref 5)</p>	<p>NPS EN-5 addresses policy for energy transmission infrastructure. Section 2.3 Climate Change Adaptation and Resilience states that applicants should consider any impact on the development from flooding, storms, coastal erosion, and earth movement or subsidence caused by flooding or drought (for underground cables).</p> <p>This chapter provides a climate change risk assessment for the Proposed Development, considering precipitation, temperature changes and extreme weather events as per UKCP18 projections.</p>
<p>The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting (2023 – 2028) (Ref 6)</p>	<p>The National Adaptation Programme is the Government’s strategy to address the main risks and opportunities identified in the risk assessment for England and is also produced every five years. The latest National Adaptation Plan was published in 2023. It sets out key actions for the next five years, including protecting and adapting local businesses, infrastructure and natural environment in the face of changing climate.</p>
<p>The National Planning Policy Framework (NPPF), 2024 (Ref 7)</p>	<p>The National Planning Policy Framework (NPPF) sets out the planning policies for England. Chapter 14 of the NPPF (Meeting the Challenge of Climate Change, Flooding, and Coastal Change) sets out the approach to the planning system’s transition to a low carbon, climate-resilient future in the context of changing climate. Key sections of relevance to this assessment include paragraphs 162-164 in relation to adaptation, mitigation and climate change</p>

Policy	Relevance to assessment
	<p>resilience; and paragraphs 170-182 in relation flood risk and adaptation.</p> <p>This chapter provides a climate change risk assessment for the Proposed Development, considering precipitation, temperature changes and extreme weather events as per UKCP18 projections.</p>
<p>The Flood Risk and Coastal Change Guidance within the National Planning Practice Guidance (Ref 8)</p>	<p>The Flood Risk and Coastal Change Guidance within the National Planning Practice Guidance (NPPG) contains climate change allowances to be included in Flood Risk Assessments (FRA). These allowances take the form of percentage uplifts for streamflow and precipitation for proposed drainage design.</p> <p>This chapter refers to findings and mitigation measures with regards to flood risk relevant to climate change. This is also provided within Appendix 15.1 Flood Risk Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.15.01].</p>
<p>UK Climate Change Risk Assessment (Ref 9)</p>	<p>The UK Climate Change Risk Assessment identifies 61 climate risks across multiple sectors of society. Its purpose is to help identify the range of potentially significant and costly impacts that the UK will be subject to unless significant further action is taken now. It seeks to continue to raise ambitions on adaptation to ensure the UK is resilient to the challenges of climate change.</p> <p>This chapter aligns with the principles of the UK Climate Change Risk Assessment through its consideration of risks identified in the UK CCRA that are relevant to the Proposed Development.</p>
<p>North Yorkshire Council - Climate Change Strategy 2023 to 2030 (Ref 10)</p>	<p>Within this strategy document, Key Theme 2 is dedicated to adaptation and resilience. This section highlights the Council's focus on improving resilience and key strategies to do so.</p> <p>The findings of this chapter support the Strategy's aim to improve resilience by identifying relevant climate hazards and mitigation measures for the Proposed Development.</p>
<p>Selby District Core Strategy Local Plan, adopted 2013 (Ref 11)</p>	<p>In line with Selby's Core Strategy Objective 7, concerned with tackling climate change and promoting sustainable patterns of development, Strategic policy SP15 Sustainable Development and Climate Change have been considered.</p> <p>The findings of this chapter support the Core Strategy's aim to improve resilience by identifying relevant climate hazards and mitigation measures for the Proposed Development.</p>

Standards and guidance

Table 7-4 Climate change resilience - standards and guidance

Standards and guidance	Relevance to assessment
<p>Institute of Environmental</p>	<p>IEMA provides guidance on the best practice methodology to consider the vulnerability of projects to climate change (i.e. climate change resilience)</p>

Standards and guidance	Relevance to assessment
<p>Management and Assessment (IEMA)¹ Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation (Ref 12)</p>	<p>and the in-combination climate change impacts of projects upon other environmental disciplines. This chapter provides a climate change risk assessment for the Proposed Development, aligning with the requirements outlined in the IEMA guidance document. As per the conclusion of the EIA Scoping Report, the in-combination climate change impacts assessment has been scoped out.</p>
<p>Planning Inspectorate (PINS) Technical Advice Page for Scoping Solar Development – Solar Scoping Table (Ref 15)</p>	<p>PINS provides guidance on the scoping of solar projects. It proposes that a description should be included of the potential climate change impacts both now and in the future, considering both the lifetime of the Proposed Development and appropriate future climate change projections, such as flooding from surface and fluvial flood risk. Evidence and assumptions provided in this chapter: Evidence relied upon in scoping out aspects of the assessment are provided within Sections 7.8 and 7.9. Associated assumptions are listed in within Section 7.6. Mitigation and commitments register: Section 7.10 provides further details of the proposed mitigation measures considering the above examples, as may be relevant. The Commitments Register at Appendix 1.3 (ES Volume 3) [EN0110012/APP/LVS/06.03.01.03] provides the mitigation proposed and relied upon based on the scope of the assessment presented in this chapter.</p>

7.4 Stakeholder engagement and consultation

EIA Scoping Opinion

7.4.1 An EIA Scoping Report (Appendix 1.1 (ES Volume 3) **[EN0110012/APP/LVS/06.03.01.01]**) was submitted to PINS on 11 November 2024. The EIA Scoping Opinion was issued by PINS on 19 December 2024 (Appendix 1.2 (ES Volume 3) **[EN0110012/APP/LVS/06.03.01.02]**). A summary of key comments and how these have been addressed is presented in Table 7-5 below.

Table 7-5 Climate change resilience – EIA Scoping Opinion comments

EIA Scoping Opinion I.D	EIA Scoping Opinion comment	How is this addressed
<p>PINS [ID 3.4.1]</p>	<p>The Inspectorate agrees that the Proposed Development, in combination with changes in temperature, storm frequency and intensity, flooding and drought are unlikely to result in significant effects</p>	<p>Comment noted. These aspects, formally known as the In-Combination Climate Change Impacts assessment, have been scoped out of the ES assessment.</p>

¹ In July 2025, IEMA rebranded to the Institute of Sustainability and Environmental Professionals (ISEP). As the CCR guidance was published when the organisation was IEMA, reference to the IEMA guidance is made throughout.

EIA Scoping Opinion I.D	EIA Scoping Opinion comment	How is this addressed
	upon receptors identified by other environmental disciplines. These matters can be scoped out of the ES.	
PINS [ID 3.4.2]	The EIA Scoping Report proposes to scope out an assessment of climate change resilience during the construction phase. The Inspectorate agrees that climatic conditions are not expected to change significantly during the construction stage and agrees that this matter can be scoped out of further assessment.	Comment noted. A CCR assessment of the construction phase has been scoped out of the ES assessment.
Environment Agency (EA) Section 8	The EA stated that with reference to climate change resilience the efficiency of the BESS facility proposed could be impacted due to extreme heat. The EA noted that this should be discussed, and mitigation measures explored (such as use of natural shading).	The increase in extreme heat events have been scoped in for the operational and decommissioning stages. Therefore, assessment of CCR risks to the BESS facility is included within Section 7.9.
Natural England	Natural England stated that the ES should identify how the development affects the ability of the natural environment (including habitats, species, and natural processes) to adapt to climate change, including its ability to provide adaptation for people. This should include impacts on the vulnerability or resilience of a natural feature (i.e. what's already there and affected) as well as impacts on how the environment can accommodate change for both nature and people, for example whether the development affects species ability to move and adapt. The ES should set out the measures that will be adopted to address impacts.	Comment noted. Meeting held with Natural England on Wednesday 16th April 2025 to discuss this issue. Natural England agreed with the methodology outlined within the scoping chapter and agreed with the scoping conclusions to scope out ICCI considering the acceptance of this position from the Inspectorate. Natural England indicated acceptance of this methodology and no further comments on this topic have been received.

Statutory consultation

7.4.2 A period of statutory consultation took place between 26 June to 7 August 2025 wherein consultees were able to respond to preliminary environmental information set out in the Preliminary Environmental Information Report (PEIR).

7.4.3 Responses to the Statutory Consultation are outlined in the Consultation Report [EN0110012/APP/LVS/05.1]. No responses relating to Climate Change Resilience were received. Riccall Parish Council noted concerns relating to carbon, these are outlined in Chapter 9: Greenhouse Gas Emissions (ES Volume I) [EN0110012/APP/LVS/06.01.09].

Targeted consultation

7.4.4 A period of targeted consultation took place between 16th October 2025 and 20 November 2025, during which feedback was encouraged to comment on minor changes to the development boundary area, in relation to access points during construction and operation; visibility splays to ensure safe sightlines for vehicles entering and exiting the Proposed Development; passing places on narrow roads; access requirements for abnormal indivisible loads (less frequent but large delivery vehicles that have wider turner circles); cable route adjustments to avoid environmental and engineering constraints; and permissive paths to enable increased public access routes within the Solar Development Sites. Table 7-6 outlines the statutory consultation responses relating to climate change resilience and how these have been addressed through the ES.

7.4.5 Full responses to the targeted consultation are outlined in the Consultation Report [EN0110012/APP/LVS/05.01].

Table 7-6 Targeted consultation comments

Consultee	Comment	Applicant response
Thorganby Parish Council	The Proposed Development is unlikely to offer local residents any energy cost benefits, as electricity would be sold into the wider market, effectively turning the area into an industrial economy for energy production	<p>The Applicant acknowledges concerns regarding local residents' energy costs. While the Proposed Development does not influence retail electricity pricing, it contributes to national renewable energy and security objectives. Solar is one of the cheapest forms of energy and can be quickly deployed to add capacity to the National Grid which, in combination with other renewable energy projects, would help to bring down costs by reducing the UK's reliance on fossil fuels and decoupling the UK's energy system from the international market.</p> <p>The government has been undertaking a Review of Electricity Market Arrangements (REMA) to decouple consumer electricity prices from volatile, gas-driven wholesale markets. Key strategies include splitting the market into "variable" (renewables) and "firm" (gas/nuclear) power, implementing green power pools, and expanding Contracts for Difference (CfD) to ensure consumers pay for the lower average cost of renewables rather than the high marginal cost of gas.</p>
Skipwith Parish Council	The Proposed Development is likely to deliver far less energy than its stated 500 MW capacity, making	The Applicant notes that 500 MW is the connection capacity to Monk Fryston Substation, agreed with the National Grid; the Applicant acknowledges that solar generation output may vary across the year, particularly in winter, which is also when demand is highest. As such, and as outlined in the Statement of Need [EN0110012/APP/LVS/05.03], timing demand to periods

Consultee	Comment	Applicant response
	its actual grid contribution disproportionately small compared with the significant environmental and landscape harms it would cause	<p>of high supply will be important, as will building sufficient generation capacity to meet demand under a variety of weather conditions. As outlined in the Statement of Need [EN0110012/APP/LVS/05.03] when the BESS is not supporting the operation of the Proposed Development, it may be useful for the BESS to support the national supply and demand balance by importing directly from the grid rather than from the co-located solar, further offsetting the lower generation levels of the Proposed Development during winter.</p> <p>The Applicant respectfully disagrees with the sentiment that the Proposed Development is a disproportionate response to meeting the UK’s energy needs. The Applicant has prepared a Statement of Need [EN0110012/APP/LVS/05.03] which sets out in full the need and justification for the Proposed Development. The Statement of Need describes the Government’s policy that large capacities of low carbon generation will be required to meet increased demand and replace output from retiring (fossil fuel) plants, and that “a secure, reliable, affordable, Net Zero consistent system in 2050 is likely to be composed predominantly of wind and solar”. The National Policy Statement for Energy EN-3 (December 2025) states that that the UK has huge potential for solar power and that solar energy is at the heart of the Clean Power 2030 Mission [Paras 2.10.1 & 2.10.2]. The Proposed Development therefore directly contributes towards meeting the national net zero and energy security requirements for the near future.</p>

Stakeholder engagement

7.4.6 No further stakeholder engagement has been undertaken, except for that outlined in Table 7-5 and Table 7-6.

7.5 Methodology

Overview

7.5.1 The following sections outline the methodology employed for assessing the likely significant effects of climate change on the Proposed Development during its operation and decommissioning.

7.5.2 The assessment includes potential climate hazards for infrastructure and assets associated with the Proposed Development. In line with IEMA Environmental Impact Assessment (EIA) Guide to: Climate Change Resilience & Adaptation (hereafter referred to as ‘IEMA (2020) guidance’) (Ref 12), a qualitative assessment has been undertaken based on professional expertise and judgment.

7.5.3 As part of the CCR assessment, future projected climate conditions and extreme weather events for the Study Area are provided for the time periods from 2050s

to 2080s, covering a key time frame of the operational phase when the regional climate is projected to change considerably compared with the baseline conditions. UKCP18 climate change projections at regional level (12 km grid resolution) used for this assessment are not available beyond 2080.

7.5.4 This methodology section relates to CCR assessment only as ICCI assessment has been scoped out.

Baseline methodology

Desktop sources

7.5.5 The following desktop sources have been used to inform the existing baseline conditions of the Study Area:

- 1) UKCP18 National Climate Change Projections: These projections set out a range of possible climate scenarios for the UK until 2100 based on latest scientific findings (Ref 16).
- 2) HadUK weather data: HadUK-Grid is a collection of gridded climate variables derived from the network of UK land surface observations (Ref 17).

7.5.6 Climate projections take into account uncertainty due to natural variability and an incomplete understanding of the climate system and its imperfect representation in models. The projections do this by giving the probabilities of a range of possible outcomes, as estimated by scientific methodology.

7.5.7 Met Office UK Climate Projections 2018 (UKCP18) are the most recent and comprehensive climate change projections for the UK. In addition to projections for future climate they also contain a comprehensive set of observed historical climate observations.

Survey

7.5.8 No surveys are required for the CCR assessment.

Sensitive receptors

7.5.9 Elements within the Proposed Development are identified as receptors for the CCR assessment. This includes proposed infrastructure, assets (equipment, materials) and human health receptors (including workers on-site during operation and decommissioning).

7.5.10 The receptors identified for inclusion in the CCR assessment are:

- 1) Solar PV;
- 2) BESS;
- 3) Substations, including switchgear and transformers;
- 4) Conversion units and 33kV switch rooms;

- 5) On-site cabling (partially underground);
- 6) Cable Route Corridors;
- 7) Drainage systems;
- 8) Land;
- 9) Staff, workers and visitors on-site;
- 10) Plant and vehicles (including vehicles for workers' travel and plant needed for scheduled and unforeseen maintenance and replacement activities);
- 11) Security measures including perimeter fencing and CCTV; and
- 12) Access routes.

Assessment methodology

Significance criteria

- 7.5.11 The significance of the climate risks identified in the CCR Assessment are determined as a combination of the likelihood of a hazard having an impact on the Proposed Development and the consequence of the impact occurring. This methodology differs from that described in Chapter 4: Approach to EIA (ES Volume 1) [EN0110012/APP/LVS/06.01.04] and aligns with the IEMA (2020) guidance (Ref 12).
- 7.5.12 Likelihood and consequence are assessed on a qualitative four-point scale based on professional judgement in line with the IEMA (2020) guidance (Ref 12). Likelihood scores and definitions used in this assessment are provided in Table 7-7.

Table 7-7 Qualitative four-point scale of likelihood of hazard impact.

Score	Likelihood definition
High	Occurs many times during the lifetime of the Proposed Development (e.g. seasonally) OR lasts many years/indefinitely.
Medium	Occurs more than once OR lasts several months/one year.
Low	Occurs once OR lasts several weeks.
Negligible	Unlikely to occur during the design life OR only lasts for a few days.

- 7.5.13 Table 7-8 sets out the scores and definitions for assessing consequences of hazard impact. The consequence definitions below have been reviewed and updated between the PEIR and ES assessments due to a greater understanding of the Proposed Development, its design, and possible risks during operation. As a result, there are minor amendments to the definitions in Table 7-8, the significance matrix in Table 7-9 and updates to the scoring within Appendix 7.1: Climate Change Resilience Assessment (ES Volume 3) [EN00110012/APP/LVS/06.03.07.01] which details the full assessment.

Table 7-8 Qualitative four-point scale of consequence of hazard impact.

Score	Consequence definition
High	Very large financial loss. Unplanned total interruption to operation that is difficult to remedy. Very large safety risks.
Medium	Large financial loss. Unplanned total interruption to operation that is easy to remedy. Large safety risks.
Low	Small financial loss. Unplanned partial interruption to operation. Moderate safety risks.
Negligible	Little financial loss. Little/no interruption to operation. Very small or no safety risks.

7.5.14 The final significance matrix is set out in Table 7-9. IEMA (2020) guidance states that professional judgement should be used to determine whether an effect is significant. Where a risk is identified as major or major/moderate, this has been deemed to be significant

Table 7-9 Significance scoring matrix

		Consequence			
		High	Medium	Low	Negligible
Likelihood	High	Major (S)	Major/ Moderate (S)	Moderate/ Minor (NS)	Minor/ Negligible (NS)
	Medium	Major/ Moderate (S)	Moderate (S)	Minor (NS)	Negligible (NS)
	Low	Moderate (S)	Minor (NS)	Minor (NS)	Negligible (NS)
	Negligible	Minor/ Negligible (NS)	Negligible (NS)	Negligible (NS)	Negligible (NS)

S = Significant | NS = Not Significant

7.5.15 Full details of the assessment are included within Appendix 7.1: Climate Change Resilience Assessment (ES Volume 3) **[EN0110012/APP/LVS/06.03.07.01]**. Only effects that are concluded as ‘significant (S)’ are considered in detail within Section 7.9.

7.6 Assumptions and limitations

7.6.1 It is assumed that the data, information, and sources obtained from all organisations, institutions, bodies, or individuals is accurate at the time of its acquisition and/or consultation. It is assumed that where any information has been obtained from respected open-source repositories, these sources were accurate at the time of writing and all citations, copyright, and distribution requirements are correct and clearly communicated.

- 7.6.2 The limitations and assumptions for using the proposed methodology are:
- 1) As noted within the IEMA (2020) guidance, the assessment method is largely qualitative, particularly the process of scoring risks.
 - 2) There is limited methodological guidance on the assessment of individual risks.
 - 3) There is inherent uncertainty in climate change projections. The quantitative data used in this study was obtained from UKCP18, the latest set of probabilistic projections for the UK.
 - 4) There is often uncertainty in the relationship between changes in climate hazards and the respective response in terms of asset performance. This uncertainty has been assessed qualitatively.
 - 5) The UKCP18 climate change projection data used within the assessment (regional 12km grid resolution) are not available beyond 2080. It is assumed that the climate projections will continue on a similar trend beyond 2080 for the decommissioning phase.

7.7 Baseline conditions

Existing baseline conditions

- 7.7.1 Information regarding historical climate conditions for the Proposed Development was obtained from HadUK observation data (Ref 17). HadUK data includes various climate metrics which mirror projection data to provide context for the future baseline. Historical climate conditions are provided within the 'Baseline Observation (1980-2010)' column of Table 7-10.

Future baseline

- 7.7.2 Future projected climate data for average conditions and extreme weather events were also collected for the Proposed Development. This is due to the assessment considering the changed future climate compared with the observed baseline weather for the Study Area. Climate projection data is usually defined in 20- or 30-year time periods. For operation and decommissioning, the dates used are 2050-2080 as this reflects the furthest possible time in the future where the Proposed Development will be in operation and projections are available.
- 7.7.3 The probabilistic projections in the UKCP18 dataset provide local low, central and high changes across the UK, corresponding to various probability levels (e.g. 10%, 50% and 90%). There are a number of Representative Concentration Pathways (RCPs) available for UKCP18 with each pathway representing different growth in CO₂ emissions and associated climate scenario resulting in a range of global mean temperature increases over the 21st century.
- 7.7.4 UKCP18 climate projection data for Representative Concentration Pathway (RCP) 8.5 has been used to describe the future baseline. The use of RCP 8.5 as a future baseline, which represents a high emissions and high impact future

scenario, is in line with IEMA (2020) guidance recommendations (Ref 12) to take a conservative approach establishing realistic changes to future climatic conditions.

7.7.5 Table 7-10 contains both the historical baseline information, and the future climate change projections for multiple climate metrics. The table also provides metrics describing both average and extreme conditions.

Table 7-10 Baseline and projection data for climate metrics*

Metric	Unit	Baseline observation (1980-2010)	Future climate (2050 to 2080)		
			10th percentile	50th percentile	90th percentile
Summer mean temperature	°C	15.8	19.3	20.2	20.5
Winter mean temperature	°C	4.4	6.3	7.1	7.7
Average summer precipitation	mm/day	1.8	1.2	1.4	1.6
Average winter precipitation	mm/day	1.6	1.6	1.8	1.9
Average daily maximum temperature in summer	°C	20.3	24.6	25.5	26.2
Average daily minimum temperature in winter	°C	1.6	3.4	4.3	4.8
Number of hot days (daily maximum temperature higher than 25°C)	days / year	10.4	41.4	55.6	62.1
Average number of heatwaves per year (3 days above 25°C)	occurrences/ year	1.3	5.1	6.3	7.0
Dry spells (10 days or more with no precipitation)	occurrences/ year	3.6	4.1	4.3	5.0
Heavy rainfall (annual number of days with >20mm rainfall)	days/ year	2.3	2.1	2.8	3.6

* All projection data was taken for RCP 8.5. Future projection data is presented for three probability levels (percentiles) within this concentration pathway.

7.7.6 Overall, the results suggest that the following future weather hazards are likely to be applicable to the Proposed Development:

- 1) Warmer winters: During both operation and decommissioning, as Table 7-10 shows, both the winter average and average daily minimum temperatures are increasing.
- 1) Wetter winters and drier summers: The data presented in Table 7-10 suggests some seasonal shift in rainfall patterns. On average, mean summer precipitation is projected to decrease by 24% while mean winter precipitation is projected to increase by 19% over the course of the operational phase of the Proposed Development.
- 2) Increased heavy rainfall: The data presented in Table 7-10 suggests that the number of heavy rainfall events will increase, potentially bringing increased risks of flooding, especially when combined with the overall increases in winter precipitation.
- 3) Hotter summers and increases in extreme heat: The average summer temperatures are projected to increase, as are the number of days above 25°C (the regional threshold used by the Met Office for heatwaves), which are set to rise from an average of two occurrences per year in the baseline period to more than six occurrences per year.

7.7.7 The latest Met Office information about future changes to other variables suggests the following trends:

- 1) Storms: There are no compelling trends in changes to storminess, as determined by maximum gust speeds, from the UK wind network over the last four decades. From 2050 onwards, increases in the frequency of winter storms are expected over the UK with deeper and more intense storms (Ref 13);
- 2) Wind: From 2050 onwards, there is an increase in near surface wind speeds over the UK the winter season. Surface wind speeds increase more over western parts of the UK in winter and decrease across the UK in summer (Ref 14); and
- 3) Lightning: There is likely to be an increase in lightning frequency over the UK in summer and spring, with a decrease in autumn. In winter, future decreases in lightning are seen over the sea to the north and west of the UK, where high flash rates are currently seen (Ref 13).

7.8 Embedded and good practice mitigation and enhancement measures

Embedded mitigation

7.8.1 Embedded measures are modifications to the design of a scheme, made during the pre-application phase, that are an inherent part of the design and do not require additional action to be taken. Good practice measures are standard

approaches and actions undertaken to avoid or reduce environmental impacts in line with best practice guidance and legislative requirements.

7.8.2 The Proposed Development has evolved through an iterative design process. Measures for the Proposed Development relevant to CCR are already embedded in the design include:

4) Design

- a) Embedded mitigation includes the commitment to placing all flood-sensitive infrastructure (including BESS and substations) outside of Flood Zone 3, and Flood Zone 2 as far as is practical to reduce the risk of flooding to the development. This has been achieved in the Proposed Development layout, as shown Figure 2.1: Illustrative Site Layout Plans (ES Volume 2) **[EN0110012/APP/LVS/06.02.02.01]** and as secured through the Works Plans **[EN0110012/APP/LVS/02.03]**. Site-specific hydraulic model outputs, including flood extents and levels, have also been used to inform the Proposed Development Design and locate flood-sensitive assets in areas of lowest flood risk, as demonstrated through the embedded mitigation measures for the Proposed Development and already committed to and secured within the Design Parameters and Commitments Document **[EN0110012/APP/LVS/05.06]** and as shown on the Works Plans **[EN0110012/APP/LVS/02.03]**.
- b) The BESS has been located outside of Flood Zones 2 and 3 and is situated in Flood Zone 1 on Solar Development Site 2, Field 2.4 in the Proposed Development layout for the Solar Development Sites shown in Figure 2.1: Illustrative Site Layout Plans (ES Volume 2) **[EN0110012/APP/LVS/06.02.02.01]** and as secured through the Works Plans **[EN0110012/APP/LVS/02.03]**. It is shown to be outside of the site-specific flood model extents associated with the design event and credible maximum scenario (1 in 100-year event plus 31% or 51% climate change allowance, respectively). Locating infrastructure in Flood Zone 1 helps minimise floodplain loss and flood risk by avoiding areas that naturally store and manage floodwaters, reducing the chance of flooding and its impacts;
- c) To safeguard flood sensitive infrastructure such as the BESS, integrated conversion units, and the 275kV substations, these are elevated by ensuring the minimum Finished Floor Level (FFL) would be set to the design event flood level plus 0.3m freeboard or the credible maximum scenario flood level, whichever is greater as set out in Table 2-1 in Chapter 2: Proposed Development (ES Volume 1). Where stilted foundations are used a minimum of 0.6 m freeboard would be applied. **[EN0110012/APP/LVS/06.01.02]** and secured within the Design Parameters and Commitments Document **[EN0110012/APP/LVS/05.06]** This ensures that critical equipment remains above expected flood levels and continues to operate under design flood conditions. Further information on the approach to finished floor levels can be found in

- Chapter 15: Water Resources and Flood Risk (ES Volume 1); **[EN0110012/APP/LVS/06.01.15]** and its accompanying appendices;
- d) As per the Environment Agency Flood Risk Assessments: Climate Change Allowances' Guidance, the Proposed Development will be designed to be flood resilient, including the recommended climate change allowances for peak river flows and peak rainfall intensities as set out in Chapter 15: Water Resources and Flood Risk (ES Volume 1) **[EN0110012/APP/LVS/06.01.15]**, its accompanying appendices and secured within the Design Parameters and Commitments Document **[EN0110012/APP/LVS/05.06]**;
 - e) Permeable surfacing will be utilised for the on-site Solar PV access tracks to allow for water infiltration to subsoils and reduce surface water runoff and flooding risk. The access tracks for the Substations and BESS may be constructed of asphalt over a levelling layer of substrate. Details provided within Chapter 15: Water Resources and Flood Risk (ES Volume 1) **[EN0110012/APP/LVS/06.01.15]**, its accompanying appendices and secured within the Design Parameters and Commitments Document **[EN0110012/APP/LVS/05.06]**;
 - f) BESS systems would include Heating, Ventilation and Cooling (HVAC) and liquid cooling systems to maintain appropriate operating temperatures to mitigate the risk of overheating and fire, and these would be contained within the individual equipment containers as secured in the Outline Battery Safety Management Plan (oBSMP) **[EN0110012/APP/LVS/07.06]**;
 - g) Perimeter fencing will reduce the risk of wind-blown debris damaging the BESS or the substations and appropriate lightning protection will be constructed to reduce the risk of damages caused by lightning strikes.
 - h) As outlined in Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**, flexibility for either tracker or fixed solar panels has been built into the Proposed Development design to maximise power generation efficiency in a changing climate;
 - i) Geotechnical ground investigations will be completed prior to construction to inform the detailed design of on-site cabling within the Cable Route Corridors within the Proposed Development.
 - j) Modules have heat-resistant PV cells and module materials designed to withstand short peaks of very high temperature to prevent overheating and potential damage as per the Outline Operational Environmental Management Plan (oOEMP) **[EN0110012/APP/LVS/07.03]**; and
 - k) It is assumed that the main components of the Proposed Development, as outline within Chapter 2: Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**, will be replaced at least once during the operational life. The replaced components will be reflective of the latest design standards, accounting for current climate conditions at the time of replacement to ensure continued resilience as per the oOEMP **[EN0110012/APP/LVS/07.03]**. Operational programme of replacement activities and replacement assumptions are outlined in Chapter 2: The

Proposed Development (ES Volume 1)
[EN0110012/APP/LVS/06.01.02].

- 5) Operation
- a) An Outline Operational Environmental Management Plan (oOEMP) **[EN0110012/APP/LVS/07.03]** is submitted with the DCO Application and details mitigation measures relevant to the operation of the Proposed Development. The DCO Application secures that a detailed version of this plan will be submitted for approval to be in substantial accordance with this outline plan;
 - b) An Outline Battery Safety Management Plan (oBSMP) **[EN0110012/APP/LVS/07.06]** is submitted with the DCO Application and details measures to reduce the risk of the BESS electrical equipment overheating and ensure the Proposed Development's resilience to, and risk of causing, wildfires during the operation phase. The DCO Application secures that a detailed version of this plan will be submitted for approval to be in substantial accordance with this outline plan;
 - c) An Outline Landscape and Ecology Management Plan (oLEMP) **[EN0110012/APP/LVS/07.05]** is submitted with the DCO Application. The DCO Application secures that a detailed version of this plan will be submitted for approval to be in substantial accordance with this outline plan. The oLEMP details the required mitigation for landscape and habitat features impacted by climate hazards such as drought, high precipitation, heat and flooding;
 - d) Appendix 15.1: Flooding Risk Assessment (ES Volume 3) **[EN0110012/APP/LVS/06.03.15.01]** and Appendix 15.4: Outline Drainage Strategy (ES Volume 3) **[EN0110012/APP/LVS/06.03.15.04]** includes a number of adaptation measures to be considered in the detailed design and operations management. These include the installation of Sustainable Drainage Systems (SuDS) for surface water management around critical infrastructure and retention of vegetation on the underlying ground cover below solar PV;
 - e) At time of assessment, options of both tracker or fixed Solar PV Panels are still being considered. Tracker panel units would be mounted on raised frames (raised a minimum of 0.4 m when on maximum rotation angle) and would therefore, be raised above surrounding ground levels and fitted with a tracking system. During times of flooding, tracked solar panels may be stowed by the tracking system algorithm onto a horizontal plane, to a maximum height of 2.5 m above ground level. This ensures that all sensitive and electrical equipment on the solar panel is raised to a minimum of 2.5 m above ground level in the horizontal position, reducing the risk of damage from flooding as per the oOEMP **[EN0110012/APP/LVS/07.03]**.
- 6) Decommissioning - Whilst the following mitigation measures should be followed whilst working during current weather conditions, these should be

reviewed and refined closer to the date of decommissioning to take account of climate changes within the next 60 years.

- a) Mitigation measures are included in the Outline Decommissioning Environmental Management Plan (oDEMP) **[EN0110012/APP/LVS/07.04]**. The oDEMP is submitted with the DCO Application to secure the commitments contained within. The DCO Application secures that a detailed version of this plan will be submitted for approval to be in substantial accordance with this outline plan.
- b) During decommissioning, workers might be at risk of heat-related illness due to extreme temperatures and heatwaves. To mitigate this risk, work should be scheduled during the cooler parts of the day, such as early mornings or late afternoons. Shade structures should be provided in rest areas, and workers should have access to drinking water and regular breaks.
- c) Extended outdoor work increases exposure to UV radiation, which can cause long-term health issues such as skin cancer. Workers should be encouraged to wear UV-protective clothing, hats, and sunglasses. Sunscreen should be made available as part of personal protective equipment (PPE), and shaded work zones should be established where feasible.
- d) Decommissioning activities may be disrupted by flash floods or heavy rainfall, especially if the site is located in a flood-prone area. These events pose safety risks to workers and can damage equipment or cause hazardous materials to leak. Contractors should monitor weather forecasts and Environment Agency flood alerts. An Outline Flood Warning and Evacuation Plan (oFWEP) will be developed as per Appendix 15.1 Flood Risk Assessment (ES Volume 3) **[EN0110012/APP/LVS/ 06.03.15.01b]** and will contain mitigation measures relevant to human receptors. Hazardous materials should be stored securely and positioned away from drainage systems to prevent environmental contamination.
- e) Strong winds can pose serious risks during decommissioning. Wind can also cause debris to become airborne, endangering workers and equipment. Decommissioning may need to be temporarily suspended, or certain activities halted. Work schedules may need to be amended until high winds abate. Weather conditions and alerts should be monitored regularly and work schedules amended accordingly.
- f) The risk of fire increases during periods of extreme heat, especially when flammable materials are present on-site. Fires can threaten worker safety and damage infrastructure. Fire prevention measures should be implemented in accordance with local fire authority guidelines. Fire safety plans should be developed for all site facilities, and contractors should follow best practices such as keeping flammable materials away from ignition sources and ensuring fire extinguishers are readily available.
- g) Extreme weather events such as heatwaves, storms, or flooding can delay decommissioning activities, impacting project timelines and

budgets. Contingency time should be built into the decommissioning schedule to accommodate potential delays. Flexible work plans and adaptive scheduling can help maintain progress despite adverse conditions.

Good practice measures

- 7.8.3 The Proposed Development will be designed to be resilient against adverse environmental effects of climate change through the process of design development and consideration of good design principles.
- 7.8.4 The design of the Proposed Development will incorporate a number of good practice measures to ensure its resilience to future changes in climate. These will include adherence to the latest industry standards, specification of durable, resilient materials and choice of solar panels designed to withstand extreme weather conditions such as heat, wind and rainfall. Additionally, the on-site drainage system will be designed to manage runoff and prevent flooding, as per Appendix 15.4 Outline Drainage Strategy (ES Volume 3) **[EN0110012/APP/LVS/06.03.15.04]**. The BESS design parameters will take into account higher average daily summer temperatures and include suitable HVAC and liquid cooling systems to mitigate the increased fire risk, as per the Outline Battery Safety Management Plan (oBSMP) **[EN0110012/APP/LVS/07.06]**.
- 7.8.5 During the operation of the Proposed Development, safety during extreme weather events will be ensured through relevant health and safety measures and by following government guidelines. As per the oOEMP, these might include, but not be limited to:
- 1) Monitoring of weather forecasts and the news for Environment Agency flood warnings, relevant weather warnings, and water levels of the local waterways;
 - 2) Workers and staff wearing loose clothing, staying hydrated and applying sun protection during extreme heat; and
 - 3) Provision of flood defence equipment on-site during flood events.

Management plans

- 7.8.6 A suite of management plans including those outlined above are included within the DCO Application, relevant to CCR:
- 1) Outline Construction Environmental Management Plan (oCEMP) **[EN0110012/APP/LVS/07.02]**;
 - 2) Outline Operation Environmental Management Plan (oOEMP) **[EN0110012/APP/LVS/07.03]**;
 - 3) Outline Decommissioning Environmental Management Plan (oDEMP) **[EN0110012/APP/LVS/07.04]**; and
 - 4) Outline Battery Safety Management Plan (oBSMP) **[EN0110012/APP/LVS/07.06]**;

5) Outline Landscape and Ecology Management Plan (oLEMP)
[EN0110012/APP/LVS/07.05].

7.8.7 These management plans incorporate embedded and good practice measures, as well as any further mitigation that falls out of the EIA process.

7.8.8 These management plans incorporate embedded and good practice measures, as well as any further mitigation that arises out of the EIA process. Outline versions of these management plans are submitted alongside the ES as part of this DCO Application to secure the commitments within each assessment.

7.9 Assessment of likely impacts and effects

7.9.1 This section presents the results of the assessment of likely significant effects with the embedded and good practice mitigation measures, described in the previous section, in place. The full assessment can be found in Appendix 7.1: Climate Change Resilience Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.07.01].

Operational effects

7.9.2 During the operational phase, there is the potential for adverse weather conditions to impact the Proposed Development. More frequent extreme weather conditions such as storms, high winds and heavy precipitation have the potential to cause direct damage to the Proposed Development, including critical assets such as solar panels, BESS and substations. Extreme weather events will also pose physical risks to staff, workers and visitors on-site. However, embedded mitigation measures have been developed. These include design mitigation to ensure resilience of the Proposed Development to projected climate change, such as weather-resilient material specification, elevation of flood-sensitive components and operational mitigation secured through environmental management plans (more details on embedded mitigation measures can be found in Section 7.8). As a result, it is assumed that most assets within the Proposed Development will be designed to withstand a degree of climate change in future and no significant effects are realised for storms and high winds, heavy precipitation and flooding, and drought.

7.9.3 Mean daily maximum temperatures in summer are projected to increase beyond the 25°C threshold for Met office heatwave definition and the number of heatwaves and hot days per year is projected to increase more than five-fold for the 2050-2080 period. Extreme heat has the potential to adversely impact the Proposed Development, causing overheating of electrical equipment and reduction in solar power generation and BESS efficiency. It may also cause heat-related illness such as heat stroke among staff, workers and visitors on-site.

7.9.4 However, it is anticipated that embedded mitigation measures outlined in Section 7.8 will provide sufficient levels of resilience to the projected changes in climate for all receptors considered in this assessment. All climate hazards identified in this chapter and Appendix 7.1: Climate Change Resilience Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.07.01] will be considered within the

design of the Proposed Development and reflected in relevant management plans. As a result, **no significant effects** were identified for the operational stage of the Proposed Development.

Decommissioning effects

- 7.9.5 During the decommissioning stage of the Proposed Development, there is a potential for extreme weather conditions to pose risks to decommissioning plant and equipment and workers on-site. Workers may be at risk of heat-related illness during periods of extreme heat. Storms, high winds and heavy precipitation might physically damage plant, vehicles and equipment, and pose health and safety risks to workers.
- 7.9.6 Risks to human health will be mitigated through adherence to relevant health and safety measures, provision of personal protective equipment where necessary and by rescheduling on-site visits and maintenance activities during extreme weather conditions.
- 7.9.7 Due to the decommissioning phase likely to be in the latter half of this century (post 2050), it is also anticipated that some climate hazards will have either intensified, or become more frequent, or both. However, it is also assumed that best practice in health and safety and decommissioning techniques will have evolved with regards to climate risks as these risks have emerged and become more generally recognised. Therefore, **no significant effects** are anticipated during decommissioning.

7.10 Additional mitigation

- 7.10.1 Additional mitigation comprises actions that require additional site and project specific activity in order to achieve a reduction in effect, and/or anticipated outcome.
- 7.10.2 The Climate Change Resilience Assessment (Appendix 7.1 (ES Volume 3) [EN0110012/APP/LVS/06.03.07.01]) has found that the embedded mitigation measures are expected to provide sufficient levels of mitigation against projected climate changes and so no additional mitigation is proposed.

7.11 Residual effects

- 7.11.1 It is anticipated that the embedded mitigation measures will provide sufficient levels of mitigation and therefore there will be **no significant residual adverse effects**.

7.12 Monitoring

- 7.12.1 To monitor the effects of climate change on the Proposed Development the following measures shall be applied, as set out in the Outline Construction Environmental Management Plan (oCEMP) [EN0110012/APP/LVS/07.02] and Outline Operational Environmental Management Plan (oOEMP) [EN0110012/APP/LVS/07.03]:

- 1) Regular monitoring of weather forecasts for extreme conditions and activation of response plans as needed to reduce risks to the Proposed Development from heatwaves, heavy rainfall, and strong winds during both operation and decommissioning phases.
- 2) Regular monitoring of weather-related impacts throughout the operational phase of the Proposed Development, acknowledging the uncertainties in climate change projections. This monitoring will help evaluate the effectiveness of mitigation measures and should be updated when new climate data becomes available.
- 3) A record of extreme weather incidents impacting the Proposed Development (e.g., road surface damage, flooding, snow, ice) will be developed and monitored to help identify thresholds that trigger maintenance. Post-event inspections should follow intense rainfall or other extreme conditions to assess damage and apply necessary mitigation.
- 4) Conduct regular inspections of drainage systems, materials, and structures to identify signs of deterioration. Additional checks should be carried out after extreme weather events (e.g., flooding, heatwaves, droughts, storms), with repairs or replacements scheduled as needed.

7.13 Summary

- 7.13.1 Table 7-11 presents a summary of the CCR assessment, detailing further mitigation requirements and residual effects. Further details, including the level of significance, are provided within Appendix 7.1: Climate Change Resilience Assessment (ES Volume 3) **[EN00110012/APP/LVS/06.03.07.01]**.

Table 7-11 Climate change resilience - assessment summary

	Receptor/ aspect and sensitivity /value /importance	Description of impact	Magnitude	Significance of effect	Additional mitigation	Residual effect and significance
Operation						
Extreme heat	All receptors	Risk of equipment overheating and/or reduced equipment efficiency. Risks of heat-related illness to human receptors.	N/A	Not significant	None required	No significant residual effects identified.
Storms and high winds	All receptors	Risk of physical damage to assets and safety risks to human receptors.	N/A	Not significant	None required	No significant residual effects identified.
Heavy precipitation and flooding	All receptors	Risks of physical damage due to flooding, particularly to electrical equipment. Safety risks to human receptors.	N/A	Not significant	None required	No significant residual effects identified.
Drought	All receptors	Potential damages and safety risks caused by land subsidence due to drought.	N/A	Not significant	None required	No significant residual effects identified.
Wildfires	All receptors	Risk of damage to assets and health and	N/A	Not significant	None required	No significant residual effects identified.

	Receptor/ aspect and sensitivity /value /importance	Description of impact	Magnitude	Significance of effect	Additional mitigation	Residual effect and significance
		safety risks to human receptors.				
Decommissioning						
Extreme heat	All receptors	Risk of decommissioning plant and equipment overheating. Risks of heat-related illness to human receptors.	N/A	Not significant	None required	No significant residual effects identified.
Storms and high winds	All receptors	Risk of physical damage to decommissioning plant and equipment and safety risks to human receptors.	N/A	Not significant	None required	No significant residual effects identified.
Heavy precipitation and flooding	All receptors	Risks of physical damage to decommissioning plant and equipment due to flooding. Safety risks to human receptors.	N/A	Not significant	None required	No significant residual effects identified.
Drought	All receptors	Potential damages and safety risks caused by land subsidence due to drought.	N/A	Not significant	None required	No significant residual effects identified.

7.14 Cumulative assessment

- 7.14.1 The CCR assessment considers the resilience of the Proposed Development to climate change, not the combined impact from a range of different activities and other surrounding developments and therefore an assessment of CCR cumulative effects is not required.

References

- Ref 1 UK Government (2008) Climate Change Act. [Online]. Available at: <https://www.legislation.gov.uk/ukpga/2008/27/contents> . [Accessed January 2026].
- Ref 2 UK Government (2017) The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. [Online]. Available at: <https://www.legislation.gov.uk/ukxi/2017/572/contents> . [Accessed January 2026].
- Ref 3 Department for Energy Security and Net Zero (2015) Overarching National Policy Statement for Energy (EN-1). [Online]. Available at: <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1-2025> . [Accessed January 2026].
- Ref 4 Department for Energy Security and Net Zero (2025) “National Policy Statement for Renewable Energy Infrastructure (EN-3). [Online]. Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3-2025> . [Accessed January 2026].
- Ref 5 Department for Energy Security and Net Zero (2025) National Policy Statement for Electricity Networks Infrastructure (EN-5). [Online]. Available at: <https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5-2025> . [Accessed January 2026].
- Ref 6 UK Government (2023) The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting.[Online]. Available at: https://assets.publishing.service.gov.uk/media/64ba74102059dc00125d27a7/The_Third_National_Adaptation_Programme.pdf . [Accessed January 2026].
- Ref 7 UK Government (2024) National Planning Policy Framework. [Online]. Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf . [Accessed January 2026].
- Ref 8 UK Government (2025) Flood risk and coastal change guidance (as part of the National Planning Policy Framework). [Online]. Available at: <https://www.gov.uk/guidance/flood-risk-and-coastal-change> . [Accessed January 2026].
- Ref 9 UK Government (2022) UK Climate Change Risk Assessment 2022. [Online]. Available at: <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022> . [Accessed January 2026].
- Ref 10 North Yorkshire Council, Climate change strategy 2023 to 2030, [Online]. Available at: <https://www.northyorks.gov.uk/environment-and-neighbourhoods/climate-change/climate-change-strategy-2023-2030> . [Accessed January 2026].
- Ref 11 Selby District Council (2013) Selby District Core Strategy Local Plan. [Online]. Available at:

- [https://www.northyorks.gov.uk/sites/default/files/fileroot/planning_migrated/planning_policy/CS Adoption Ver OCT 2013 REDUCED.pdf](https://www.northyorks.gov.uk/sites/default/files/fileroot/planning_migrated/planning_policy/CS_Adoption_Ver_OCT_2013_REDUCED.pdf) . [Accessed January 2026].
- Ref 12 Institute of Environmental Management and Assessment (2020) Environmental Impact Assessment Guide to: Climate Change Resilience & Adaptation. [Online]. Available at: [REDACTED] . [Accessed January 2026].
- Ref 13 Met Office (2022) UK Climate Projections: Headline Findings. Available at: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18_headline_findings_v4_aug22.pdf [Accessed January 2026].
- Ref 14 Met Office (2021) UK Climate Projections 2018 Wind Fact Sheet. Available at: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-fact-sheet-wind_march21.pdf [Accessed January 2026].
- Ref 15 Planning Inspectorate (2024) Guidance Nationally Significant Infrastructure Projects: Technical Advice Page for Scoping Solar Development. [Online]. Available at: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-technical-advice-page-for-scoping-solar-development> . [Accessed January 2026].
- Ref 16 Met Office Hadley Centre (2020) UKCP18 Regional Projections at 12km Resolution for 1980-2080. [Online]. Available at: [REDACTED] [Accessed January 2026].
- Ref 17 Met Office Hadley Centre (2018) HadUK-Grid gridded and regional average climate observations for the UK. [Online]. Available at: [REDACTED] [Accessed January 2026].



Light Valley
Solar

W: Lightvalleysolar.co.uk
E: info@lightvalleysolar.co.uk