
FENWICK SOLAR FARM

Preliminary Environmental Information Report

Volume III Appendix 6-2: Climate Change Risk Assessment

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1. Introduction

1.1 Purpose of this Appendix

- 1.1.1 This appendix presents the results of the Climate Change Risk Assessment (CCRA) for the construction, operation and maintenance, and decommissioning phases of the Scheme in the form of a Climate Change Risk Assessment table. It should be read in conjunction with **Preliminary Environmental Information Report (PEIR) Volume I Chapter 6: Climate Change**.
- 1.1.2 The time-period for the initial risk rating of each phase of the Scheme reflects the period of the obtained climate change projection data (e.g. projections for 2020-2049 cover the estimated construction phase of 2028-2030).

1.2 Climate Change Risk Assessment

- 1.2.1 The three tables below present the climate change risks associated with each phase of the Scheme, from construction through operation and maintenance to decommissioning. Future climate projections have been reviewed and the sensitivity of assets have been examined, before commenting on the adequacy of the embedded climate change mitigation measures built into the Scheme.
- 1.2.2 Identified climate variables are given a significance rating, based upon the likelihood of an impact occurring to the Scheme and the anticipated consequences. This includes consideration of embedded mitigation measures.

Table 1-1: Construction Climate Change Risk Assessment

Construction										
Risk Identification						Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2020-2049)			
							Likelihood	Consequence	Risk rating	
1	Extreme rainfall events	Surface water flooding and standing water	Direct	Physical structures	Asset damage	A Drainage Strategy has been prepared which can be found in PEIR Volume I Chapter 9: Water Environment and PEIR Volume III Appendix 9-4: Drainage Strategy . This attenuates the Scheme's surface water runoff and minimises flood risk to the site and surrounding areas. Arrangements have been agreed with the Environment Agency to ensure the Solar PV Panels are set back by 10 metres from all water features. Further detail can be found in PEIR Volume I Chapter 9: Water Environment .	Low	Low	Low	Not Significant
2	Extreme rainfall events	Working on-site in dangerous conditions	Direct	Workforce	Safety and health	The Framework Construction Environmental Management Plan (CEMP) (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan) states that contracts with companies involved in the construction work will incorporate environmental control, health and safety regulations, and current guidance to ensure that construction activities are sustainable. A Safety, Health and Environment Manager will also advise construction managers to cascade through to all workers.	Negligible	Low	Low	Not Significant
3	Decrease in annual rainfall	Increase drought risk	Indirect	All receptors	All impact types	None required	Unlikely	Low	Low	Not Significant
4	Increase in summer temperature	Risk of overheating to workers	Direct	Workforce	Health and safety	The Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan) states that contracts with companies involved in the construction work will incorporate environmental control, health and safety regulations, and current guidance to ensure that construction activities are sustainable. A Safety, Health and Environment	Negligible	Very low	Negligible	Not Significant

Construction										
Risk Identification						Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2020-2049)			
							Likelihood	Consequence	Risk rating	
						Manager will also advise construction managers to cascade through to all workers.				
5	Increase in summer temperature	Increase damage to infrastructure	Direct	Physical structures	Asset damage	During construction, the contractor will monitor weather forecasts on a monthly, weekly, and daily basis, and plan works accordingly based on anticipated weather conditions.	Negligible	Very low	Negligible	Not Significant
6	Increase in annual temperature	Risk of overheating to workers	Direct	Workforce	Safety and health	During construction, the contractor will monitor weather forecasts monthly, weekly, and daily, and plan works accordingly. Contracts with companies involved in the construction work will incorporate environmental control, health and safety regulations, and current guidance to ensure that construction activities are sustainable. A Safety, Health and Environment Manager will also advise construction managers to cascade through to all workers.	Negligible	Low	Low	Not Significant
7	Decrease in summer rainfall	Increase drought risk	Indirect	All receptors	All impact types	None required	Negligible	Very low	Negligible	Not Significant
8	Increase to winter rainfall	Viability of and access to sites (such as heavy rain resulting in surface water flooding of local roads, sources of power supply, or inundation of sites)	Direct	All receptors	Safety and health	During construction, the contractor will monitor weather forecasts on a monthly, weekly, and daily basis, and plan works accordingly. Flood resilience measures to infrastructure have been produced and are detailed in PEIR Volume III Appendix 9-4: Drainage Strategy .	Negligible	Very Low	Negligible	Not Significant
9	Increase in heatwaves	Increased heat stress/heat exhaustion for workers	Direct	Workforce	Safety and health	During construction, the contractor will monitor weather forecasts monthly, weekly, and daily, and plan works accordingly. Contracts with companies involved in the construction work will incorporate environmental control, health and safety	Negligible	Low	Low	Not Significant

Construction										
		Risk Identification				Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2020-2049)			
							Likelihood	Consequence	Risk rating	
						regulations, and current guidance to ensure that construction activities are sustainable. A Safety, Health and Environment Manager will also advise construction managers to cascade through to all workers.				
10	Wildfire risk	Risk to workers over dry periods	Direct	Workforce	Safety and health	During construction, the contractor will monitor weather forecasts monthly, weekly, and daily, and plan works accordingly. Contracts with companies involved in the construction work will incorporate environmental control, health and safety regulations, and current guidance to ensure that construction activities are sustainable. A Safety, Health and Environment Manager will also advise construction managers to cascade through to all workers.	Low	Low	Low	Not Significant

Table 1-2: Operation and Maintenance Climate Change Risk Assessment

Operation and Maintenance										
		Risk Identification				Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2050-2079)			
							Likelihood	Consequence	Risk rating	
1	Extreme rainfall events	Surface water flooding and standing water	Direct	Physical structures	Asset damage	<p>Drainage arrangements to attenuate surface water runoff and minimise flood risk to the Scheme location and surrounding areas will be discussed within the ES. A Drainage Strategy has been produced as part of PEIR Volume III Appendix 9-4: Drainage Strategy.</p> <p>Arrangements have been agreed with the Environment Agency to ensure the Solar PV Panels are set back by 10 metres from all water features. Further detail can be found in PEIR Volume I Chapter 9: Water Environment.</p>	Low	Moderate	Low	Not Significant
2	Extreme rainfall events	Deterioration of structures or foundations due to soil moisture levels	Direct	Physical structures	Asset damage	<p>Drainage arrangements to attenuate surface water runoff and minimise flood risk to the Scheme location and surrounding areas will be discussed within the ES. Details around the Scheme's drainage strategy is available in PEIR Volume III Appendix 9-4: Drainage Strategy.</p>	Low	Low	Low	Not Significant
3	Extreme rainfall events	Working on-site in dangerous conditions	Direct	Workforce	Safety and health	<p>Drainage arrangements to attenuate surface water runoff and minimise flood risk to the Scheme location and surrounding areas will be discussed within the ES. PEIR Volume III Appendix 9-4: Drainage Strategy discusses the Scheme's drainage Strategy.</p> <p>As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an Operational Environmental Management Plan (OEMP) will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the Environmental Statement (ES).</p>	Low	Low	Low	Not Significant

Operation and Maintenance										
		Risk Identification				Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2050-2079)			
							Likelihood	Consequence	Risk rating	
4	Decrease in annual rainfall	Drought risk	Direct	Workforce	Safety and Health	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management methods for health and safety, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Low	Low	Low	Not Significant
5	Decrease in annual rainfall	Drought risk potentially impacting landscape	Indirect	Physical structures, materials	Asset damage	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management and maintenance methods for asset damage, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Negligible	Low	Low	Not Significant
6	Increase in summer temperature	Damage to materials	Direct	Materials, plant, and machinery	Asset damage	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management and maintenance methods for asset damage, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Low	Moderate	Low	Not Significant
7	Increase in summer temperature	Overheating of electrical equipment	Direct	Physical structures	Asset damage	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management and maintenance methods for asset damage, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works.	Negligible	Low	Low	Not Significant

Operation and Maintenance										
		Risk Identification				Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2050-2079)			
							Likelihood	Consequence	Risk rating	
						Further control details are due to be developed ahead of the ES.				
8	Increase in summer temperature	Overheating of workforce in hot conditions	Direct	Workforce	Safety and health	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management and maintenance methods for asset damage, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Negligible	Low	Low	Not significant
9	Increase in winter temperature	Operational efficiency of the Scheme	Direct	Physical structures	Asset use	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP will be developed by Operation and Maintenance Managers following sign off on completion of the operation and maintenance of the Scheme. Further control details are due to be developed ahead of the ES.	Negligible	Very low	Negligible	Not Significant
10	Increase in annual temperature	Risk of overheating to workers	Direct	Workforce	Safety and health	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management methods for health and safety, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Low	Moderate	Low	Not Significant
11	Decrease in summer rainfall	Increased drought risk	Indirect	Physical structures	Asset damage	None required	Negligible	Very low	Negligible	Not Significant

Operation and Maintenance										
Risk Identification						Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2050-2079)			
							Likelihood	Consequence	Risk rating	
12	Increase to winter rainfall	Viability of and access to sites (such as heavy rain resulting in surface water flooding of local roads, sources of power supply, or inundation of sites)	Direct	All receptors	Safety and health	A Drainage Strategy has been produced as part of the PEIR Volume III Appendix 9-4: Drainage Strategy . PEIR Volume I Chapter 9: Water Environment details further mitigation opportunities around increased rainfall and flood resilience.	Low	Moderate	Low	Not Significant
13	Increase in heatwaves	Overheating of electrical equipment	Direct	Physical structures	Asset damage	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management and maintenance methods for asset damage, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Negligible	Moderate	Low	Not Significant
14	Increase in heatwaves	Damage to materials	Direct	Materials	Asset damage	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP, including management and maintenance methods for asset damage, will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Low	Low	Low	Not Significant
15	Increase in heatwaves	Increased heat stress/heat exhaustion for workers	Direct	Workforce	Safety and health	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES.	Low	Moderate	Low	Not Significant

Operation and Maintenance										
		Risk Identification				Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2050-2079)			
							Likelihood	Consequence	Risk rating	
16	Increased wildfire risk	Potential danger for solar battery to cause or be damaged by wildfire	Indirect	Physical structures	Safety, asset damage	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), an OEMP will be developed by Operation and Maintenance Managers following sign off on completion of the construction works. Further control details are due to be developed ahead of the ES. There will also BESS emergency plans and general fire safety health and safety documents developed ahead of the Scheme's operation and maintenance phase.	Low	Low	Low	Not Significant

Table 1-3: Decommissioning Climate Change Risk Assessment

Decommissioning										
Risk Identification						Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2050-2079)			
							Likelihood	Consequence	Risk rating	
1	Extreme rainfall events	Surface water flooding and standing water	Direct	Physical structures	Asset damage	Drainage arrangements to attenuate surface water runoff and minimise flood risk to the Scheme location and surrounding areas will be presented in the ES. Infrastructure flood resilience is detailed in PEIR Volume I Chapter 2: The Scheme and PEIR Volume I Chapter 9: Water Environment , including around arrangements for the Solar PV Panels to be more than 10 metres away from water features.	Low	Moderate	Low	Not Significant
2	Extreme rainfall events	Working on-site in dangerous conditions	Direct	Workforce	Safety and health	Drainage arrangements to attenuate surface water runoff and minimise flood risk to the Scheme location and surrounding areas will be presented in the ES. A Decommissioning Environmental Management Plan (DEMP) will be developed with the DCO application, secured through the DCO Requirement.	Low	Low	Low	Not Significant
3	Decrease in annual rainfall	Drought risk	Direct	Workforce	Safety and health	None required	Negligible	Very low	Negligible	Not Significant
4	Increase in winter temperature	None considered	NA	All receptors	All impact types	None required	Negligible	Very low	Negligible	Not Significant
5	Increase in annual temperature	Risk of overheating to workers	Direct	Workforce	Safety and health	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), a DEMP will be developed with the DCO application which will be secured through the DCO Requirement.	Low	Moderate	Low	Not Significant
6	Decrease in summer rainfall	Increased drought risk	Indirect	All receptors	All impact types	None required	Negligible	Very low	Negligible	Not Significant

Decommissioning										
		Risk Identification				Risk Assessment				Significance
Risk ID	Climate Variable	Risk Statement	Type of risk	Project receptors	Impact type	Planned Controls	Initial risk rating (RCP8.5 2050-2079)			
							Likelihood	Consequence	Risk rating	
7	Increase to winter rainfall	Viability of and access to sites (such as heavy rain resulting in surface water flooding of local roads, sources of power supply, or inundation of sites)	Direct	All receptors	Safety and health	A Drainage Strategy has been produced which can be found in PEIR Volume III Appendix 9-4: Drainage Strategy . As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), a DEMP will be developed with the DCO application which will be secured through the DCO Requirement.	Negligible	Low	Low	Not Significant
8	Increase in heatwaves	Increased heat stress/heat exhaustion for workers	Direct	Workforce	Safety and health	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), a DEMP will be developed with the DCO application which will be secured through the DCO Requirement.	Low	Moderate	Low	Not Significant
9	Increased wildfire risk	Potential danger to decommissioning workers on site over dry periods	Direct	Workforce	Safety and health	As stated in the Framework CEMP (PEIR Volume III Appendix 2-1: Framework Construction Environmental Management Plan), a DEMP will be developed with the DCO application which will be secured through the DCO Requirement.	Low	Medium	Low	Not Significant

An aerial photograph of a vast solar farm at sunset. The rows of solar panels stretch across the landscape, creating a strong sense of perspective. The sky is a mix of orange, yellow, and dark blue, with the sun low on the horizon, casting long shadows and a warm glow over the entire scene.

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