FENWICK SOLAR FARM

Preliminary Environmental Information Report Volume 4

Appendix 6-3: ICCI Environmental Technical Disciplinary Risk Assessment

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1. Introduction

1.1 Purpose of this Appendix

1.1.1 This Preliminary Environmental Information Report (PEIR) appendix supports **PEIR Volume I Chapter 6: Climate Change** and presents the results of the In-combination Climate Change Impact (ICCI) Assessment for the Scheme in the form of a summary table.

1.2 In-Combination Climate Change Impact Assessment

1.2.1 The technical disciplines have reviewed the future climate projections as set out in **PEIR Volume I Chapter 6: Climate Change** and examined the sensitivity of assets before commenting on the combined impact of Climate Change and the Scheme on surrounding sensitive receptors (as identified by the relevant technical disciplines) (**PEIR Volume I Chapter 7: Cultural Heritage** to **PEIR Volume I Chapter 14: Other Environmental Topics**).

1.2.2 Given the nature of ICCIs, ongoing surveys and monitoring by the technical disciplines must be complete before a full assessment of ICCIs can be made and therefore further assessment will be provided within the Environmental Statement (ES) accompanying the Development Consent Order (DCO) Application.

1.2.3 The parameters considered by the technical disciplines in the preparation of the ICCI assessment are:

a. Extreme weather events (heatwaves, storm surges, wildfire and drought);
b. Sea level rise;
c. Temperature changes;
d. Rainfall changes; and
e. Changes in wind patterns.

Table 1-1: ICCI Assessment Summary

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
Construction Phase							
Air Quality	Decrease in annual precipitation rate	Unlikely	Increase in dust due to lower rainfall	Dust impacts from construction will be mitigated through the appropriate level of site mitigation for the identified level of risk. For example, through increased frequency of damping down using water (reusing water or suppressants where practicable) or using temporary covering, or earlier seeding where this would deliver a benefit. With appropriate mitigation the effect is negligible (not significant).	Negligible	Negligible	Not Significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
	Increase in frequency and intensity of heatwaves	Unlikely	Increase in dust due to faster drying of soil stockpiles	Dust impacts from construction will be mitigated through the appropriate level of site mitigation for the identified level of risk. For example, through increased frequency of damping down using water (reusing water or suppressants where practicable) or using temporary covering, or earlier seeding where this would deliver a benefit. With appropriate mitigation the effect is negligible (not significant).	Negligible	Negligible	Not Significant
Biodiversity Net Gain	No ICCIs identified						
Ecology	ICCI assessment not yet complete						
Flood Risk	No ICCIs identified						

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
Glint and Glare	ICCI assessment not yet complete						
Ground Conditions	ICCI assessment not yet complete						
Cultural Heritage	No ICCIs identified						
Landscape	ICCI assessment not yet complete						
Minerals	ICCI assessment not yet complete						
Noise	ICCI assessment not yet complete						
Socio-economics and Land Use	No ICCIs identified						
Human Health	No ICCIs identified						
Rainfall	Decrease in summer precipitation rate	Unlikely	Soils may be at risk of erosion if handled when too dry. This could also	Decreased precipitation, could result in the drying of soils both in situ and in the temporary stockpiles	Negligible	Low	Not significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
			result in drier stockpiles.	created during the construction phase. Dry soil can be more prone to erosion, particularly where there is an absence of vegetation cover. Mitigation measures identified in the Framework Construction Environment Management Plan (CEMP) (**PEIR Volume III Appendix 2-1: Framework Construction Environment Management Plan**) as updated for ES will be adhered to. A Soil Management Plan (SMP) which details the requirements for the appropriate management of soil resources during the Scheme's lifetime will			

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
				be produced prior to the construction phase (secured through the DCO). A framework SMP will be provided with the ES.			
	Increase in winter precipitation rate	Possible	Soils may be at risk of structural damage if handled or trafficked when too wet. This could result in increased flood risk and erosion of soils.	The incorrect handling of soils (e.g. stripping, storage or reinstatement) when they are in a wet state can cause structural damage for example through compaction or deformation. Compaction lowers soil permeability increasing the risk of flooding and levels of surface water run off. Structural damage can also leave the soils more vulnerable to erosion increasing the risk of silty run off. Structural damage (compaction and smearing) can also	Negligible	Low	Not significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
				occur due to the trafficking (driving over) of wet soils by heavy machinery. Increase in Winter Precipitation will increase the likelihood of soils being in a wet state. Mitigation measures identified in the CEMP/SMP accompanying the ES will be adhered to.			
	Operation and Maintenance Phase						
	Decrease in summer precipitation rate	Possible	Soils may be at risk of erosion if handled when too dry. This could also result in dryer stockpiles –	Decreased precipitation could result in the drying of soils leaving it more vulnerable to erosion. However, it is anticipated that there will be no requirement for the handling of soil resources during the operation and	Negligible	Low	Not Significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
				maintenance phase and that the majority of vehicle movements within the Solar PV Site will be via access tracks. Any trafficking of vehicle off the tracks will be on vegetated (grassed) soil surfaces which bind the soil and reduce erosion risk. Therefore, no impacts are anticipated however the mitigation measures identified in the Operational Environmental Management Plan (OEMP) accompanying the ES will be adhered to. In the unlikely event that maintenance of underground cables is required necessitating the handling of soil resources in order to			

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
				access to the fault, this would be confined to small discrete areas of a significantly smaller scale that at construction. Works plans (or similar) for these operations would include the appropriate management of soil resources (based upon the measures described in the CEMP and SMP, and in the OEMP which will be developed ahead of the ES) which would mitigate any impacts.			
	Increase in winter precipitation rate	Likely	Soils may be at risk of structural damage if handled or trafficked when too wet. This could also result in increased flood	The incorrect handling of soils, or trafficking across soils, when they are in a wet state can cause structural damage for example through compaction or deformation. This structural damage lowers	Low	Moderate	Not Significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
			risk and erosion of soils.	soil permeability increasing the risk of flooding and levels of surface water run off; and can also leave the soils more vulnerable to erosion increasing the risk of silty run off. Increase in Winter Precipitation will increase the likelihood of soils being in a wet state. It is anticipated that there will be no requirement for the handling of soils during the operation and maintenance phase. However, in the unlikely event that maintenance of underground cables is required this would be confined to small discrete areas of a significantly smaller scale that at construction. Works plans (or similar) for			

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
				these operations would include the appropriate management of soil resources (based upon the measures described in the CEMP and SMP, and in the OEMP which will be developed ahead of the ES) which would mitigate any impacts. Measures would be put in place to control the movement of vehicles over wet ground to mitigate trafficking damage. These will be defined in the detailed OEMP prepared prior to the construction phase.			
	Decommissioning Phase						
	Decrease in summer precipitation rate	Possible	Soils may be at risk of erosion if handled or trafficked when too	It is assumed (as a worst case) that underground cables will be removed through re-excavation in	Negligible	Low	Not Significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
			dry. This could also result in dryer stockpiles.	an operation similar to construction, and that therefore the temporary stockpiling of soils will be required. Decreased precipitation, could result in the drying of soils both in situ and in the stockpiles. Dry soil can be more prone to erosion, particularly where there is an absence of vegetation cover. Appropriate mitigation measures will be identified within the Decommissioning Environment Management Plan (DEMP) and are likely to be the same as/similar to those described at construction within the CEMP and all phases within the SMP.			

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
	Increase in winter precipitation rate	Likely	Soils may be at risk of structural damage if handled or trafficked when too wet, particularly during late Autumn and Winter. This could also result in increased flood risk and erosion of soils.	The incorrect handling of soils, or trafficking across soils, when they are in a wet state can cause structural damage for example through compaction or deformation. This structural damage lowers soil permeability increasing the risk of flooding and levels of surface water run off; and can also leave the soils more vulnerable to erosion increasing the risk of silty run off. Increase in Winter Precipitation will increase the likelihood of soils being in a wet state. Appropriate mitigation measures will be identified within the DEMP and are likely to be the same as/similar to	Low	Moderate	Not Significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
				those described at construction within the CEMP and all phases within the SMP.			
Transport	No ICCIs identified						
Waste	No ICCIs identified						
Water	Increase in winter precipitation rate	Possible	Increased ground water level mixed with potential existing contamination, if present	Any areas of contamination encountered during construction would be removed, remediated, or mitigated.	Low	Negligible	Not significant
	Increase in winter precipitation rate	Possible	Peak discharge rates exceeding capacity of attenuation treatment train	Attenuation storage will be designed to take account of climate change. Further details are available in **PEIR Volume III Appendix 9-4: Drainage Strategy**.	Low	Negligible	Not significant
	Decrease in summer	Possible	More regular cleaning of Solar PV Panels from	Standard 2-yearly Solar PV Panel cleaning is assumed, with no	Low	Negligible	Not significant

Discipline	Climate Hazard	Likelihood of Climate Hazard Occurring	Likely ICCIs Identified	Description of ICCI Considering Embedded Environmental Measures/Good Practice	Likelihood of ICCI Occurring	Consequence	Significance of Effects
	precipitation rate		dust build-up during extended dry periods	cleaning products used and requirement of 250 ml of water per Solar PV Panel. Any additional cleaning would be irregular and infrequent, with negligible amounts of water used.			
Arboriculture	ICCI assessment not yet complete						

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