HyNet North West

ENVIRONMENTAL STATEMENT (VOLUME III)

Appendix 7.1 Climate Resilience Assessment of Effects

HyNet Carbon Dioxide Pipeline DCO

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulations 5(2)(a)

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TABLES

1. INTRODUCTION

1.1.1. The full assessment of potential effects from climate change during operation and decommissioning stages following the identification of embedded mitigation in the design stage **(Table 7-13)** are listed in **Tables 1 and 2** respectively. The likely impacts for the construction stage have not been included on the basis that climate resilience measures included in the **Outline CEMP (D.6.5.4)** result in low vulnerability of the construction site and workers to climate change. Only those effects showing as significant have been included in **Chapter 7** – **Climate Resilience (Volume II)** of the Draft ES.

Table 1 Effects on receptors during Operation of the DCO Proposed Development

Receptor	Climate variable	Potential Impact	Likelihood	Consequence	Significance
Carbon Dioxide Pipeline	Extreme precipitation events	Existing drainage infrastructure overwhelmed leading to surface water flooding and siltation.	Medium	*Minor adverse*	*Not Significant*
	Extreme temperature events	Faster rate of deterioration of materials from increase in UV radiation (for example, brittleness and fading)	High	*Minor adverse*	*Not Significant*
		Increase in thermal expansion of structure joints compromising structural integrity leading to increased maintenance	High	*Minor adverse*	*Not Significant*
		Shrinking and cracking of soils	High	***Moderate adverse***	***Significant***
	Sea level rise	Drainage infrastructure overwhelmed from sea level rise.	Low	*Minor adverse*	*Not Significant*
		Reduction of earthwork stability due to sea level rise and flooding.	Low	*Minor adverse*	*Not Significant*
		Increase in deterioration of structures from sea level rise	Low	*Minor adverse*	*Not Significant*
AGIs & BVSs	Changes in annual average precipitation	Flooding of AGI and BVS components.	High	*Minor adverse*	*Not Significant*
		Damage to the AGIs and BVSs from increased run off.	High	*Minor adverse*	*Not Significant*
	Extreme precipitation events	Damage to AGIs and BVSs from increased run off, resulting in loss of supply.	High	*Minor adverse*	*Not Significant*

Receptor	Climate variable	Potential Impact	Likelihood	Consequence	Significance
	Change in annual average temperature Extreme temperature events	Overheating of AGIs and BVSs.	High	*Minor adverse*	*Not Significant*
		Faster rate of deterioration of materials from increase in UV radiation (for example, brittleness and fading)	High	*Minor adverse*	*Not Significant*
		Increase in thermal expansion of structure joints compromising structural integrity leading to increased maintenance.	High	*Minor adverse*	*Not Significant*
		Shrinking and cracking of soils.	High	*Minor adverse*	*Not Significant*
		Risk of fire to assets to BVS and AGI's.	High	*Minor adverse*	*Not Significant*
	Gales and high winds Storms (hail)	Damage from high winds and rain infiltration into components.	High	*Minor adverse*	*Not Significant*
	Storms (lightening)	Lighting strikes causing fires.	Low	*Minor adverse*	*Not Significant*
	Sea level rise	Drainage infrastructure overwhelmed from sea level rise.	Low	*Minor adverse*	*Not Significant*
		Reduction of earthwork stability due to sea level rise and flooding.	Low	*Minor adverse*	*Not Significant*
		Increase in deterioration of structures from sea level rise	Low	*Minor adverse*	*Not Significant*

Table 2 Effects on receptors during Decommissioning of the DCO Proposed Development

Receptor	Potential Impact	Likelihood	Consequence	Significance
Decommissioning site	Flooding of sites and components.	Medium	***Moderate Adverse***	***Significant***
	Damage to sites and components from increased run off.	Medium	*Minor adverse*	*Not significant*
	Existing drainage infrastructure overwhelmed leading to surface water flooding and siltation.	Medium	***Moderate Adverse***	***Significant***
	Shrinking and cracking of soils.	Medium	*Minor Adverse*	*Not significant*
	Damage from high winds and rain infiltration into components.	Medium	*Minor Adverse*	*Not significant*
	Lightning strikes causing fires.	Low	*Moderate Adverse*	*Not significant*
Decommissioning workers	Increase in dust	Low	*Moderate Adverse*	*Not significant*
	Overheating of equipment and fire	Medium	***Moderate Adverse***	***Significant***
	Health and safety risks from heatstroke and UV radiation	Medium	***Moderate Adverse***	***Significant***
	Health and safety risks from extreme temperatures and winds	Medium	***Moderate Adverse***	***Significant***