

ENVIRONMENTAL STATEMENT (VOLUME II)

Summary of Significant Effects (Clean)

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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20. SUMMARY OF LIKELY SIGNIFICANT EFFECTS

20.1. INTRODUCTION

- 20.1.1. This Chapter provides a summary of the likely significant effects reported in this Environmental Statement (ES). Topic specific impact assessments of the DCO Proposed Development are presented in detail in **Technical Chapters 6 to 19 (Volume II)** of this ES.
- 20.1.2. The methodology for the assessment of likely significant effects is set out in **Section 5.11 of Chapter 5: EIA Methodology (Volume II)** and relevant **Technical Chapters 6 to 19 (Volume II)** of this ES where relevant. Effects, whether adverse or beneficial, assessed as being “moderate” or “major” are deemed to be significant. Effects determined to be “minor”, “negligible” or “neutral” are deemed to be not significant. Any deviation from this approach is detailed in the specific topic chapter of this ES.
- 20.1.3. **Table 20.1 Summary of Likely Significant Environmental Effects** provides a summary of the likely significant effects reported in **Chapters 6 to 19 (Volume II)** of this ES. It should be noted that where there are no residual significant effects for a topic specific assessment, or an element within a topic, no details of individual effects are presented in **Table 20-1**

Table 20.1 - Summary of Likely Significant Environmental Effects

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
Chapter 6: Air Quality				
No significant adverse or beneficial Air Quality residual effects have been identified for the construction, operation, and decommissioning stages of the DCO Proposed Development.				
Chapter 7: Climate Resilience				
No significant adverse or beneficial Climate Resilience residual effects have been identified for the construction, operation, and decommissioning stages of the DCO Proposed Development.				
Chapter 8: Cultural Heritage				
No significant adverse or beneficial Cultural Heritage residual effects have been identified for the operation and decommissioning stages of the DCO Proposed Development.				
Potential for Bronze Age funerary remains	Construction	Large adverse (significant)	Mitigation through preservation by record. The controlled and recorded removal of archaeological remains will decrease the magnitude of impact from major to moderate.	Moderate adverse (significant)
Chapter 9: Biodiversity				
No significant adverse or beneficial Biodiversity residual effects have been identified for the construction, operation, and decommissioning stages of the DCO Proposed Development.				
Chapter 10: Greenhouse Gases				
No significant adverse or beneficial GHG residual effects have been identified for the construction and decommissioning stages of the DCO Proposed Development.				
Operational phase GHG emissions	Operation	Beneficial (Significant) including the avoided emissions captured from the plants that feed into the Carbon Dioxide Pipeline system as part of the Project.	N/A	Beneficial (Significant) including the avoided emissions captured from the plants that feed into the Carbon Dioxide Pipeline system as part of the Project.
Chapter 11: Land and Soils				
No significant adverse or beneficial GHG residual effects have been identified for the operation and decommissioning stages of the DCO Proposed Development.				
Effects on soil quality – loss of BMV land due to the construction of AGIs and BVSs.	Construction	Moderate adverse (significant)	N/A	Moderate adverse (significant)
Chapter 12: Landscape and Visual				
Landscape character receptors				
No significant adverse or beneficial landscape residual effects have been identified for the operation and decommissioning stages of the DCO Proposed Development on Landscape Character Areas.				

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
<p>Dee coastal levels (FLNTVS076)</p> <p>Shotton farmland fringe (FLNTVS072)</p> <p>Estuary Edge and Valleys (FLNTVS014)</p> <p>Limestone Plateau (FLNTVS004)</p>	Construction	Moderate adverse (significant)	<p>Landscape mitigation proposals to reduce landscape effects, including landscape planting and retention and micro-siting of construction compounds and the detailed design alignment of the pipeline, where relevant and practicable, to reduce the proximity to landscape receptors.</p> <p>Refer to the Register of Environmental Actions and Commitments (Document reference: D.6.5.1) for further details.</p>	Moderate adverse (significant)
Visual amenity receptors				
<p>WAGI3 - Recreational users of Public Footpath Flint 66</p> <p>WAGI4 - Residents of Bryn Mawr; Recreational users of Public Footpath Flint 68</p> <p>WAGI7 - Residents of Tros-y-mynydd, Starkey Lane; Recreational users of Public Footpath Flint 70</p>	Construction	Moderate adverse (significant)	<p>Landscape mitigation proposals to reduce visual effects of the Flint AGI. Refer to the Register of Environmental Actions and Commitments (Document reference: D.6.5.1) for further details.</p>	Moderate adverse (significant)
<p>WAGI8 - Recreational users of Public Footpath Northop 4</p> <p>WAGI8a - Recreational users of Public Footpath Northop 4</p>	Construction	Moderate adverse (significant)	<p>Landscape mitigation proposals to reduce visual effects of the Northop AGI. Refer to the Register of Environmental Actions and Commitments (Document reference: D.6.5.1) for further details.</p>	Moderate adverse (significant)
<p>EAGI5 - Residents within Elton</p> <p>EAGI9 - Residents within Yew Tree Close</p>	Construction	Moderate adverse (significant)	<p>Landscape mitigation proposals to reduce visual effects of the Stanlow AGI. Refer to the Register of Environmental Actions and Commitments (Document reference: D.6.5.1) for further details.</p>	Moderate adverse (significant)

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
<p>P1 - Residents off unnamed road off Connah's Quay Road Recreational users of Public Footpath Northop 2 P3* - Residents off Holywell Road Recreational users of Public Footpath Hawarden 144 P4 - Residents of Aston Recreational users of Public Footpath Hawarden 31 P4b* - Residents off Old Aston Hill, Ewloe P6 - Residents of Sandycroft off Chester Road P7 - Recreational users of the Wales Coastal Path P8* - Residents at Cop House Farm Recreational users of Public Footpath East Saltney 2 P9 - Recreational users of the Chester Millennium Greenway P10 - Residents of Saughall Recreational users of Public Footpath 263 FP6/2 P12 - Residents off Gypsy Lane PRoW users Public Footpath 211 FP4/1 P12a - Residents off Station Road Recreational users of Public Footpath 177 FP2/1 P13a, P13b and P14a - Recreational Users of Shropshire Union Canal towpath</p>	<p>Construction</p>	<p>Moderate adverse (significant)</p>	<p>Landscape mitigation proposals to reduce visual effects of the Newbuild Carbon Dioxide Pipeline. Refer to the Register of Environmental Actions and Commitments (Document reference: D.6.5.1) for further details.</p>	<p>Moderate adverse (significant)</p>

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
<p>Canal users of the Shropshire Union Canal P15a - Residents off Picton Lane Recreational users of Public Bridleway 241 BR4/1 P16 - Recreational users of Public Footpath 309 FP1/2 (North Cheshire Way)</p>				
<p>P2c - Recreational users of Public Footpath - PRow 414/39A</p>	Construction	Moderate adverse (significant)	Landscape mitigation proposals to reduce visual effects of the embedded pipeline bridge option. Refer to the Register of Environmental Actions and Commitments [REP2-017] for further details.	Moderate adverse (significant)
<p>B9a – Users of Cornist Lane B12 - Residents off Overlea Drive B13 - Recreational users of Public Footpaths Harwarden 29 and 34 B14 - Recreational users of Public Footpath 211 FP9/1 B15 - Residents at Mollington</p>	Construction	Moderate adverse (significant)	Landscape mitigation proposals to reduce visual effects of the Cornist Lane, Aston Hill and Mollington BVSS. Refer to the Register of Environmental Actions and Commitments (Document reference: D.6.5.1) for further details.	Moderate adverse (significant)
<p>WAGI3 - Recreational users of Public Footpath Flint 66 WAGI4 - Residents of Bryn Mawr Recreational users of Public Footpath Flint 68</p>	Operation	Operational Year 1 - Moderate adverse (significant)	Landscape mitigation is proposed as embedded mitigation to reduce the effects to not significant at year 15 following vegetation maturity. Therefore, no further mitigation measures are required to reduce effects at operational year 1 at the Flint AGI site. Refer to EN070007-D.2.14-LAY-Sheet 0 Flint AGI Landscape Layout for further details.	Operational Year 1 - Moderate adverse (significant) Operational Year 15 – Minor adverse (not significant)

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
WAGI8 - Recreational users of Public Footpath Northop 4 WAGI8a - Recreational users of Public Footpath Northop 4	Operation	Operational Year 1 - Moderate adverse (significant)	Landscape mitigation is proposed as embedded mitigation to reduce the effects to not significant at year 15 following vegetation maturity. Therefore, no further mitigation measures are required to reduce effects at operational year 1 at the Flint AGI site. Refer to EN070007-D.2.14-LAY-Sheet 1 Northop Hall AGI Landscape Layout for further details.	Operational Year 1 - Moderate adverse (significant) Operational Year 15 – Minor adverse (not significant)
B12 - Residents off Overlea Drive B13 - Recreational users of Public Footpaths Harwarden 29 and 34	Operation	Operational Year 1 - Moderate adverse (significant)	Landscape mitigation is proposed as embedded mitigation to reduce the effects to not significant at year 15 year following vegetation maturity. Therefore, no further mitigation measures are required to reduce effects at operational year 1 at Aston Hill BVS. Refer to EN070007-D.2.14-LAY-Sheet 3 Aston Hall BVS Landscape Layout for further details.	Operational Year 1 - Moderate adverse (significant) Operational Year 15 – Minor adverse (not significant)
B14 - Recreational users of Public Footpath 211 FP9/1 B15 - Residents at Mollington	Operation	Operational Year 1 - Moderate adverse (significant)	Landscape mitigation is proposed as embedded mitigation to reduce the effects to not significant at year 15 following vegetation maturity. Therefore, no further mitigation measures are required to reduce effects at operational year 1 at Mollington BVS. Refer to EN070007-D.2.14-LAY-Sheet 4 Mollington BVS Landscape Layout for further details.	Operational Year 1 - Moderate adverse (significant) Operational Year 15 – Minor adverse (not significant)

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
<p>P2c - Recreational users of Public Footpath - PRow 414/39AU</p>	<p>Decommissioning</p>	<p>During decommissioning: Moderate adverse (significant)</p> <p>End of Decommissioning: Not significant</p>	<p>Significant effects are expected to be short term and temporary during the decommissioning of the Alltami Brook embedded pipe bridge option reducing to not significant at the end of the Decommissioning Stage. Decommissioning design and works including further mitigation, will be undertaken in compliance with all necessary legislation, permits and best practice at that time. This will be set out in the end of life Decommissioning Environmental Management Plan (DEMP) which is a Requirement of the Draft DCO.</p>	<p>During decommissioning: Moderate adverse (significant)</p> <p>End of Decommissioning: Not significant</p>
<p>WAGI3 - Recreational users of Public Footpath Flint 66 WAGI4 - Residents of Bryn Mawr Recreational users of Public Footpath Flint 68 WAGI7 - Residents of Tros-y-mynydd, Starkey Lane and Recreational users of Public Footpath Flint 70. WAGI8 - Recreational users of Public Footpath Northop 4 WAGI8a - Recreational users of Public Footpath Northop 4 EAGI5 - Residents within Elton EAGI9 - Residents within Yew Tree Close</p>	<p>Decommissioning</p>	<p>During decommissioning: Moderate adverse (significant)</p> <p>End of Decommissioning: Not significant</p>	<p>Significant effects are expected to be short term and temporary reducing to not significant at the end of the Decommissioning Stage. Decommissioning design and works including further mitigation, will be undertaken in compliance with all necessary legislation, permits and best practice at that time. This will be set out in the end of life Decommissioning Environmental Management Plan (DEMP), which is a Requirement of the Draft DCO (Document Reference: D.3.1).</p>	<p>During decommissioning: Moderate adverse (significant)</p> <p>End of Decommissioning: Not significant</p>

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
<p>B5 - Residents off Allt Chwiler</p> <p>B6 - Residents of dwellings off the B5121</p> <p>B7 - Residents of Ffordd Babell and the B5121</p> <p>B9a – Users of Cornist Lane</p> <p>B12 - Residents off Overlea Drive</p> <p>B13 - Recreational users of Public Footpaths Harwarden 29 and 34</p> <p>B14 - Recreational users of Public Footpath 211 FP9/1</p> <p>B15 - Residents at Mollington</p>	Decommissioning	<p>During decommissioning: Moderate adverse (significant)</p> <p>End of Decommissioning: Not significant</p>	<p>Significant effects are expected to be short term and temporary during the decommissioning of AGIs and BVSSs, reducing to not significant at the end of the Decommissioning Stage. Decommissioning design and works including further mitigation, will be undertaken in compliance with all necessary legislation, permits and best practice at that time. This will be set out in the end of life Decommissioning Environmental Management Plan (DEMP) which is a Requirement of the Draft DCO (Document Reference: D.3.1).</p>	<p>During decommissioning: Moderate adverse (significant)</p> <p>End of Decommissioning: Not significant</p>
Chapter 13: Major Accidents and Disasters				
<p>Based on the assumptions and mitigation measures presented in other relevant ES Chapters, it is considered that the potential MA&D events identified during the construction and operation stages of the DCO Proposed Development will be managed to be as low as reasonably practicable.</p>				
Chapter 14: Materials and Waste				
<p>No significant adverse or beneficial Materials and Waste residual effects have been identified for the construction, operation and decommissioning stages of the DCO Proposed Development.</p>				
Chapter 15: Noise and Vibration				
<p>No significant adverse or beneficial Noise and Vibration residual effects have been identified for the operation stage of the DCO Proposed Development.</p>				

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
Likely noise effects arising from the Proposed Development construction and decommissioning activities	Construction and Decommissioning	Significant	Best Practicable Means. Temporary noise barriers, programme management of activities. Details of mitigation measures will be confirmed in the Noise and Vibration Management Plan. This will be approved by the Local Authorities. The Noise and Vibration Management Plan is included as a Requirement of the Draft DCO (Document Reference: D.3.1)	Significant , subject to the implementation of a Noise and Vibration Management Plan.
Chapter 16: Population and Human Health				
No significant adverse or beneficial Population and Human Health residual effects have been identified for the operation or decommissioning stage of the DCO Proposed Development.				
Temporary disruption to users of PRow route 309/BR4/1	Construction	Large adverse (significant)	Clear signage on diversions. Engagement with affected users and local authority.	Moderate adverse (Significant)
Temporary disruption to access and disturbance to residence at Thornton Manor Care Centre and Nursing Home	Construction	Large adverse (significant)	Application of detailed Construction Environmental Management Plan (CEMP), Construction Traffic Management Plan (CTMP) and Dust Management Plan (DMP), consultation with affected users, and Mitigation measures as identified in Chapter 15 Noise. These are included as is included as Requirements of the Draft DCO (Document Reference: D.3.1)	Moderate adverse (significant)
Temporary disruption to access to pupils and staff at St Oswald's School and disturbance to users; Temporary disruption to access and disturbance of users of Sandycroft County Primary School.	Construction	Large adverse (Significant)	Works carried out outside of term times, consultation with affected users, mitigation measures as identified in Chapter 15 Noise and the application of CTMP.	Moderate adverse (significant)

Description of Effect	Construction / Operation / Decommissioning Stage	Significance and Nature of Effects Prior to Mitigation / Enhancement	Summary of Mitigation and Enhancement	Residual Significant Effects
Temporary disruption to Greenacres Animal Park	Construction	Large adverse (Significant)	Engagement with affected users., undertaking works outside of peak season and the development of mitigation plan with Greenacres Animal Park.	Moderate adverse (significant)
Chapter 17: Traffic and Transport				
No significant adverse or beneficial Traffic and Transport residual effects have been identified for the construction, operation and decommissioning stages of the DCO Proposed Development.				
Chapter 18: Water Resources and Flood Risk				
No significant adverse or beneficial Water Resources and Flood Risk residual effects have been identified for the decommissioning stage of the DCO Proposed Development.				
Impacts to hydrological and hydromorphological processes from open cut crossings of Alltami Brook watercourse	Construction	Moderate adverse (Significant)	Mitigation includes relevant permits to be obtained for work on ordinary watercourses and main rivers, and channel and banks to be reinstated to mimic the baseline conditions, including reinstatement of an appropriate vegetation assemblage. Further mitigation measures include minimal working width to be adopted as far as practicable (16m maximum working width within the Alltami Brook), detailed design alignment of the pipeline to be determined to minimise potential impacts, and where practicable, removed habitats to be replaced. Refer to the REAC, Document reference: D.6.5.1) for further details	Moderate adverse (significant)
Chapter 19: Combined and Cumulative Effects				
No significant adverse or beneficial Combined and Cumulative residual effects have been identified for the construction, operation and decommissioning stages of the DCO Proposed Development.				