

ENVIRONMENTAL STATEMENT (VOLUME II)

Chapter 5 – EIA Methodology

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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5. EIA METHODOLOGY

5.1. INTRODUCTION

- 5.1.1. This Chapter sets out the overall approach to the Environmental Impact Assessment (EIA) for the Development Consent Order (DCO) Proposed Development. A more detailed overview of the methodology adopted for each environmental topic is provided within each respective topic chapter of this Environmental Statement (ES) (**Technical Chapters 6-19, Volume II**). The approach to the EIA has been informed by current best practice guidance and available guidance, including:
- Advice Note Three: EIA Notification and Consultation (**Ref. 5.1**);
 - Advice Note Seven: Environmental Impact Assessment, Process, Preliminary Environmental Information and Environmental Statements (**Ref. 5.2**);
 - Advice Note Seventeen: Cumulative Effects Assessment relevant to nationally significant infrastructure projects (**Ref. 5.3**).
 - Relevant Welsh Government's Technical Advice Notes (**Ref. 5.4**);
 - Flintshire County Council (FCC) Supplementary Planning Guidance Note No.21 (**Ref. 5.5**);
 - National Planning Practice Guidance (PPG) (**Ref. 5.6**); and
 - The Institute of Environmental Management and Assessment's (IEMA) EIA Guide to Shaping Quality Development (**Ref. 5.7**).
- 5.1.2. This ES contains the information specified in Regulation 14(2)(a) - (f) and Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the DCO EIA Regulations') (**Ref. 5.8**) as set out in **Table 1-1 of Chapter 1 - Introduction (Volume II)**.
- 5.1.3. An overview of the DCO Proposed Development status in relation to relevant planning policy is discussed within the **Planning Statement (Document reference: D.5.4)** that accompanies the DCO Application.

5.2. RELEVANT EXPERTISE

- 5.2.1. In line with Regulation 14(4)(a) of the DCO EIA Regulations (**Ref. 5.8**), the ES has been prepared by a suitably qualified project team. Each Chapter of the ES has been prepared by an individual suitably qualified with regard to their technical discipline. Details of the team and qualifications are set out in **Appendix 5.1 - Relevant Expertise and Competency (Volume III)**.

- 5.2.2. IEMA have awarded WSP (the authors of this ES) the EIA Quality Mark in recognition of the commitment to excellence in EIA activities. WSP have continued to maintain this following annual examination in relation to its products, staff, innovation, and promotion of EIA within the industry.

5.3. SCOPING

- 5.3.1. An EIA Scoping Opinion was received from the Planning Inspectorate (The Inspectorate) (on behalf of the Secretary of State (SoS)) in July 2021 and is presented in **Appendix 1.2 - Scoping Opinion (Volume III)**. The advice contained within the Scoping Opinion has been taken into account for the EIA assessment methodology, topics, and presentation of the ES. In accordance with Regulation 14 of the DCO EIA Regulations, this ES has been prepared in accordance with the Scoping Opinion except where the DCO Proposed Development has changed from that described in the **Scoping Report (Appendix 1.1, Volume III)**. Where additional matters have been scoped out during the assessment process, the ES explains the reasoning for scoping them out and justifies the approach taken. Specific responses to each of the items within the Scoping Opinion are provided in **Appendix 1.3 - Scoping Opinion Responses (Volume III)**.
- 5.3.2. The ES includes assessments of the following environmental topics:
- Air Quality;
 - Climate Resilience;
 - Cultural Heritage;
 - Biodiversity;
 - Greenhouse Gases;
 - Land and Soils;
 - Landscape and Visual;
 - Major Accidents and Disasters;
 - Materials and Waste;
 - Noise and Vibration;
 - Population and Human Health;
 - Traffic and Transport;
 - Water Resources and Flood Risk; and
 - Cumulative and Combined Effects.
- 5.3.3. The **Scoping Opinion (Appendix 1.2, Volume III)** concluded that some environmental topics and elements did not need to be considered as part of the EIA for the DCO Proposed Development and could therefore be scoped out.

- 5.3.4. The majority of topics have scoped out the operational works that are within the Order Limits but outside of the Newbuild Infrastructure Boundary from the EIA, i.e. the Carbon Dioxide that flows through the existing Flint Connection to Point of Ayr (PoA) Terminal Pipeline. Where it has been scoped in, it has been identified in the relevant **Technical Chapters 6-19 (Volume II)**.
- 5.3.5. No significant sources of heat and radiation are anticipated. An assessment of the effects of heat and radiation has therefore been scoped out for all topics.

5.4. CONSULTATION

- 5.4.1. Consultation is integral to the EIA process. The views of consultation bodies and the local community serve to focus the environmental studies and to identify specific issues that require further investigation, as well as to inform aspects of the design of the DCO Proposed Development.
- 5.4.2. As part of the EIA, formal consultation and informal engagement has been undertaken with a range of statutory and non-statutory consultees, including:
- All parish and community councils within the Newbuild Infrastructure Boundary;
 - Cadent;
 - Canal and River Trust;
 - Cheshire West and Chester Council (CWCC);
 - Cheshire Wildlife Trust (CWT);
 - Clwyd Powys Archaeological Trust (CPAT);
 - Clwydian Range and Dee Valley AONB;
 - FCC's Environmental Health Officer (EHO);
 - FCC's Lead Local Flood Authority (LLFA);
 - Flintshire County Council (FCC);
 - National Grid;
 - National Highways (formerly Highways England);
 - Natural Resources Wales (NRW);
 - Network Rail;
 - North and Mid-Wales Trunk Road Agency (NMWTRA);
 - North Wales Wildlife Trust (NWWT);
 - Office for Health Improvement and Disparities (formally Public Health England);
 - Office for Nuclear Regulation;
 - Public Health Wales (PHW);
 - Ramblers Society;
 - Royal Commission On the Accident & Historical Monuments of Wales;
 - Royal Mail;

- Royal Society for the Protection of Birds (RSPB);
- SP Energy Networks (SP Manweb);
- Sustrans;
- The Coal Authority;
- United Utilities; and
- Welsh Water (Dŵr Cymru).

5.4.3. The purpose of consultation with statutory and non-statutory consultees is to brief them on the DCO Proposed Development, seek feedback on the proposed approach to the assessment, and to obtain baseline data. Technical and procedural consultation was undertaken with statutory bodies. A summary of consultation undertaken to date is included in each of the **Technical Chapters 6-19 (Volume II)** of this ES.

FORMAL CONSULTATION

5.4.4. Non-statutory consultation took place with stakeholders from 9 June to 11 July 2021.

5.4.5. A Preliminary Environmental Information Report (PEIR) was published in February 2022 as required by the Planning Act 2008 (**Ref. 5.9**) and the DCO EIA Regulations 2017 (**Ref. 5.8**). The PEIR was developed to help consultees take an informed view of the likely significant environmental effects of the DCO Proposed Development.

5.4.6. A formal consultation was held from 9 February to 22 March 2022 and provided the opportunity to give feedback or questions on the PEIR. As part of this consultation, the preferred route, which had been developed and refined following feedback from the non-statutory consultation, was presented to the public. Feedback was captured on the preferred route from the public and various stakeholders, which helped further refine the proposals for the Newbuild Carbon Dioxide Pipeline.

5.4.7. A further targeted consultation was held from 17 June to 14 July 2022 that presented 24 minor design changes to the public. These changes had been made due to public feedback, refinement of the design, or solutions to engineering problems. Landowners and residents affected by these changes were contacted and given the opportunity to provide feedback on the proposed changes. Information about the changes was also made available on the HyNet Hub website.

5.4.8. Further details on the key issues raised during formal consultation are presented in the **Hynet DCO Consultation Report (Document reference: D.5.1)**.

5.4.9. Following acceptance of the DCO Application for examination by The Inspectorate, the DCO Application documents will be made available on The

Inspectorate website. The Applicant will publish notices on its website and in the press inviting members of the public and other persons to register their interest in the application with The Inspectorate by making a Relevant Representation.

Online Events

- 5.4.10. Three online events were held in February and March 2022. These were held via live online presentation format with a live-chat function, providing communities an opportunity to hear more about the DCO Proposed Development and discuss their views directly with members of the project team.

In-Person Events

- 5.4.11. Seven in-person exhibition events were held at the following locations during February – March 2022:
- Llanasa;
 - Talacre;
 - Saughall;
 - Connah's Quay;
 - Northop Hall;
 - Queensferry; and
 - Ellesmere Port.
- 5.4.12. The exhibitions included materials for members of the public to view information on the DCO Proposed Development. Members of the project team were available to answer any questions.

5.5. CONSIDERATION OF ALTERNATIVES

- 5.5.1. Regulation 14(2)(d) of the DCO EIA Regulations states that an ES should include:
- “a description of the reasonable alternatives studied by the applicant, which are relevant to the DCO Proposed Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment”.*
- 5.5.2. Further detail around the consideration of alternatives is set out in **Chapter 4 - Consideration of Alternatives (Volume II)**.

5.6. STUDY AREAS

- 5.6.1. The Study Area and approach used to establish baseline conditions for each environmental topic is set out within its respective **Technical Chapter 6-19 (Volume II)**. The Study Areas are a function of the nature of the impacts and

the locations of potentially affected environmental resources or receptors and take account of relevant guidance.

5.7. TEMPORAL SCOPE OF ASSESSMENT

5.7.1. The approach to assessment has been to assess the environmental impacts of the DCO Proposed Development at key stages in its construction, operation, and eventual end of life decommissioning.

5.7.2. The assessment scenarios considered within this EIA are as follows:

- Existing baseline (without the DCO Proposed Development) – the year that baseline data has been collected.
- Future baseline (without the DCO Proposed Development) – for comparison with the construction, operation and decommissioning stages, as described below.
- Construction of the DCO Proposed Development – as presented in **Chapter 3 - Description of the DCO Proposed Development (Volume II)**, construction is scheduled to commence in 2024 and last for approximately 16 months. **Technical Chapters 6-19 (Volume II)** have assessed a reasonable 'worst case' construction scenario and where necessary, the relevant period or 'peak' of activity within the construction programme.
- Operation of the DCO Proposed Development - as detailed in **Chapter 3 – Description of the DCO Proposed Development (Volume II)**, the period that the DCO Proposed Development would operate and be maintained, "the operational life", is assumed to be 25 years. **Technical Chapters 6-19 (Volume II)** have assessed a reasonable 'worst case' scenario where necessary and have stated the reasoning.
- Decommissioning of the DCO Proposed Development at the end of its useful life, when it ceases to be operational.

5.8. BASELINE CONDITIONS

5.8.1. In order to assess the potential impacts and effects of the DCO Proposed Development, it is necessary to determine the environmental conditions that currently exist on the land within the Newbuild Infrastructure Boundary and in the surrounding area. These are known as the existing baseline conditions.

5.8.2. The Study Area and approach used to establish baseline conditions for each environmental topic is set out within its respective **Technical Chapter 6-19 (Volume II)**. Baseline conditions are determined using the results of site surveys and investigations or desk-based data searches, or a combination of these, as appropriate. The existing baseline date is 2020-2022 since this is the period in which baseline studies for the EIA have been undertaken. Where

baseline data has been used outside this period, an explanation is given in the respective topic chapters.

ESTABLISHING FUTURE BASELINE CONDITIONS

- 5.8.3. It is also relevant for the EIA to consider future baseline conditions taking account of any planned or likely changes to the existing baseline. This ES includes an outline of the likely evolution of the existing baseline without implementation of the DCO Proposed Development based on available information and knowledge.
- 5.8.4. The future baseline conditions are predicted for each assessment scenario considered as part of the EIA. Due to the limitations, necessary assumptions, and lack of evidence associated with the future baseline (for example, it cannot be accurately measured), a detailed consideration of the effects of the DCO Proposed Development against the future baseline without the DCO Proposed Development would generally not result in a robust assessment. However, consideration has been given, in descriptive terms, within each topic chapter to likely significant effects arising in relation to the future baseline.

5.9. APPROACH TO MITIGATION

- 5.9.1. IEMA issued guidance on 'Shaping Quality Development' in November 2015 (**Ref. 5.7**) and 'Delivering Quality Development' in July 2016 (**Ref. 5.10**). In accordance with these guidance documents, three types of mitigation have been identified and used within the ES:
- **Primary mitigation** – modifications to the location or design to avoid environmental impacts during the pre-application phase that are an inherent part of the DCO Proposed Development. These measures are treated as an inherent part of the DCO Proposed Development (hereafter referred to as 'embedded mitigation').
 - **Secondary mitigation** – actions that will require further activity in order to achieve the anticipated outcome. The effectiveness of such measures is assessed within the ES and appropriate mitigation will be secured by the DCO or other suitable mechanism, such as the **Register of Environmental Actions and Commitments (REAC) (Document Reference: D.6.5.1)**.
 - **Tertiary mitigation** – actions that would occur with or without input from the EIA. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are standard practices used to manage commonly occurring environmental effects. These measures are treated as an inherent part of the DCO Proposed Development and will be secured by the DCO or other suitable mechanism, such as the **REAC (Document Reference: D.6.5.1)**.

- 5.9.2. Some key embedded mitigation methods are presented **Chapter 4 - Assessment of Alternatives (Volume II)** of this ES. The assessment of the likely significant environmental effects for the pre-mitigation scenario have considered primary and tertiary mitigation (other than permits, licenses and consents) when determining the magnitude of change.
- 5.9.3. Following assessment of the likely significant effects of the DCO Proposed Development, any further mitigation measures (secondary mitigation) will be outlined within the individual chapters and in the **Register of Environmental Actions and Commitments (REAC) (Document Ref: D.6.5.1)**. These mitigation measures will further reduce a negative effect or enhance a positive one. The assessment of likely significant effects is then carried out taking into account the identified secondary mitigation measures to identify the “residual” environmental effects.

MECHANISMS FOR SECURING ENVIRONMENTAL MEASURES

- 5.9.4. A **REAC (Document Ref: D.6.5.1)** supports this ES and DCO Application, and provides a complete register of all environmental measures and mitigation for the DCO Proposed Development. The REAC indicates how each of the commitments will be implemented (or secured).
- 5.9.5. As set out above, the iterative design process has ‘embedded’ environmental considerations into the design, by virtue of the scope of works, such as avoidance of sensitive areas. Therefore, these commitments are inherent in the **Works Plans (Document reference: D.2.4)** which are included in Schedule 1 of the **Draft Development Consent Order (DCO) (Document Reference: D.3.1)**. Some other embedded design commitments, such as implementation of trenchless crossing techniques at identified locations, will be applied at later stages of the design and are therefore included in the **REAC (Document Ref: D.6.5.1)**.
- 5.9.6. Other commitments contained in the **REAC (Document Ref: D.6.5.1)** would be implemented during the Detailed Design, Construction, Operation and Decommissioning Stages of the DCO Proposed Development to avoid or reduce impacts.
- 5.9.7. Furthermore, an **OCEMP (Document reference: D.6.5.4)** has been prepared to support the ES and DCO Application. This document acts as a control plan which sets out indicative methods to avoid, minimise and mitigate likely construction impacts. It includes the minimum protocols which will be followed in implementing the Construction Stage commitments set out in the **REAC (Document Ref: D.6.5.1)**. The Construction Contractor will develop the detailed Construction Environmental Management Plan (CEMP) substantially in accordance with the **OCEMP (Document reference: D.6.5.4)**. This is included as a Requirement of the **Draft DCO (Document Reference: D.3.1)**. The

detailed CEMP will be submitted to the relevant LPA for the parts or phases concerned for approval.

- 5.9.8. The DCO Application is also supported by 'outline' versions of management plans, such as **Outline Construction Traffic Management Plan (Document reference: D.6.5.3)** and an **Outline Archaeological Written Scheme of Investigation (WSI) (Document reference: D.6.5.2)** which the Construction Contractor will produce their detailed plans in accordance with, as included as a Requirement of the **Draft DCO (Document Reference: D.3.1)**.
- 5.9.9. Protective provisions are a further mechanism by which mitigation measures to protect the interests of other infrastructure and utility owners will be secured. Relevant protective provisions have been included within the **Draft DCO (Document reference: D.3.1)** as required.

5.10. MONITORING

- 5.10.1. The DCO EIA Regulations require, where appropriate, the monitoring of potential significant adverse effects. Where monitoring arrangements are proposed as part of the mitigation set out, this is detailed within each of the topic chapters of the ES and within the **REAC (Document Ref: D.6.5.1)**. This will be secured through the **Draft DCO (Document Ref: D.3.1)** and the results of any monitoring will be shared with statutory consultees as appropriate.

5.11. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

- 5.11.1. This ES presents a description of the DCO Proposed Development and its likely significant effects on the environment during construction, operation (including maintenance where relevant) and decommissioning, based on the environmental information available at the time of the assessment.
- 5.11.2. The design of the DCO Proposed Development represents a Preliminary Design that will be progressed and refined at the Detailed Design stage, requiring a certain level of flexibility to be maintained. Therefore, in line with Advice Note Nine (Using the Rochdale Envelope) (**Ref. 5.11**) a parameter-based approach (the 'Rochdale Envelope' approach) will be adopted to define the envelopes within which the construction and operation of the DCO Proposed Development would be undertaken. These parameters have been defined within **Section 5.12**, the DCO Application drawings and the **Draft DCO (Document Ref: D.3.1)**.
- 5.11.3. The parameters approach presents the maximum envelope within which the built development may be undertaken and this assessment of the parameters ensures the comprehensive reasonable 'worst case' assessment of the full area within which the DCO Proposed Development could be brought forward.
- 5.11.4. As such the actual development to be carried out within the parameters would be no worse than the effects reported in the ES. The final installed design and

construction methodology for the Detailed Design will be developed within these parameters without the need for further assessment of environmental impacts (though design approvals will be required to confirm compliance with the assessed parameters).

5.11.5. The following criteria have been considered when determining significance:

- Likelihood of occurrence;
- Geographical extent;
- Adherence of the proposals to legislation and planning policy;
- Adherence of the proposals to international, national and local standards;
- Sensitivity of the receiving environment or other receptor;
- Value of the affected resource;
- Whether the effect is temporary or permanent;
- Whether the effect is short, medium, or long-term in duration;
- Whether the effect is reversible or irreversible;
- Inter-relationship between effects (both cumulatively and in terms of potential effect interactions); and
- The outputs of stakeholder and public engagement.

ASSESSMENT OF SIGNIFICANCE

5.11.6. The methodology for assessing the significance of an effect will vary between environmental factors but in principle, will be based on the environmental sensitivity (or value / importance) of a receptor and the magnitude of change from baseline conditions. Where topic-specific guidance requires that specific criteria or scales for determining significance are to be used this is outlined in the **Technical Chapters 6-19 (Volume II)**.

5.11.7. In the absence of topic-specific guidance, both the magnitude of change and sensitivity (or value / importance) will be assessed on a scale of high, medium, low, and negligible as set out in **Table 5.1**. The significance of each effect will be assessed against the magnitude of change and the sensitivity (or value / importance) of the receptor or receiving environment.

Table 5.1 - Matrix for Determining Significance of Effect

		Sensitivity of Receptor / Receiving Environment to Change			
		High	Medium	Low	Negligible
Magnitude of Change	High	Major	Major to Moderate	Moderate	Negligible
	Medium	Major to Moderate	Moderate	Minor to Moderate	Negligible
	Low	Moderate	Minor to Moderate	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

- 5.11.8. The terms used within **Table 5.1** have been defined below, applying both to beneficial and adverse effects:
- **Major effect:** effects at this level are considered particularly important and relevant to the SoS's decision;
 - **Moderate effect:** effects at this level are considered to be important and relevant to the SoS's decision;
 - **Minor effect:** effects at this level are not likely to be important and relevant to the SoS's decision; and
 - **Negligible effect:** no effects or those that are beneath levels of perception within bounds of variation or within the margin of forecasting error.
- 5.11.9. When a range has been included in **Table 5.1**, professional judgment will be used to define the significance. Only Moderate and Major effects are considered to be **significant**.
- 5.11.10. Tables which summarise the likely significant effects are provided in **Technical Chapters 6 – 19 (Volume II)**. These tables outline sensitive receptors, mitigation measures and residual effects. A distinction is made between direct and indirect; short, medium, and long-term; permanent and temporary; and beneficial and adverse effects.

5.12. BASIS OF ASSESSMENT

- 5.12.1. In line with the Rochdale envelope approach, the EIA reported in this ES is based on likely reasonable worst case assumptions about the construction and operation of the DCO Proposed Development. Where details cannot be confirmed at this stage, reasonable worst case estimates have been made based on experience gained on similar developments and professional judgment. It is stated within this ES where professional judgement has been used to inform the assessment. As a result, the assumptions for assessment

may be different for each technical topic as described (Technical Chapters 6-19, Volume II).

5.12.2. As described in **Chapter 3 – Description of the DCO Proposed Development (Volume II)**, all works to construct and operate the DCO Proposed Development take place within the Order Limits. The construction works of the DCO Proposed Development only take place within the Newbuild Infrastructure Boundary. The Order Limits, Newbuild Infrastructure Boundary and other key terms are defined within the **Glossary (Document reference: D.1.7)**. The area extent of the Order Limits and Newbuild Infrastructure Boundary are depicted in **Figure 3-1 – DCO Proposed Development Boundaries**.

5.12.3. The assessment parameters for the works are detailed within **paragraphs 5.12.4 - 5.12.19**. The general approach to the assessment is provided here but specific parameters to avoid sensitive receptors relevant to certain topics will be detailed in the **Technical Chapters 6-19 (Volume II)**.

INSTALLATION OF THE NEWBUILD CARBON DIOXIDE PIPELINE USING OPEN-CUT TRENCHING

5.12.4. The EIA has assumed that the final alignment of the Newbuild Carbon Dioxide Pipeline could be situated anywhere within the Permanent Acquisition of Subsurface Area shown in **Figure 3-2 – DCO Proposed Development (Volume IV)**. The Working Width is assumed to be the area physically impacted by the construction of the DCO Proposed Development. The Working Width differs at locations depending on the construction methodology. For open-cut trenching, which will be used for the majority of the Newbuild Carbon Dioxide Pipeline, a 32m Working Width is required. The EIA therefore assumes the likely worst-case location of the Working Width within the Order Limits for all elements of the DCO Proposed Development to identify the significant effects for each topic reported in the ES. Any indicative alignment of the pipeline shown in this ES has only been used for assessment purposes and is not representative of the Detailed Design. The methodology for identifying the specific likely worst-case location used for each topic is explained within each **Technical Chapter 6-19 (Volume II)**.

INSTALLATION OF THE NEWBUILD CARBON DIOXIDE PIPELINE USING TRENCHLESS CROSSING CONSTRUCTION METHODS

5.12.5. All trenchless crossing locations have been identified, however the specific trenchless installation technique would be determined by the Construction Contractor(s) post-consent. The worst case trenchless installation technique, depending on the topic, has been assumed for the assessment.

5.12.6. As previously mentioned, the alignment of the Newbuild Carbon Dioxide Pipeline will be confirmed at the Detailed Design stage, and therefore the trenchless crossing locations, together with their entry and exit pits can move

widthways within the Permanent Acquisition of Subsurface Area. Indicative locations are shown on **Figure 3-2 – DCO Proposed Development (Volume IV)**.

- 5.12.7. The EIA uses a Rochdale Envelope approach to assess trenchless crossings based on the three techniques described within **Table 3.2 of Chapter 3 – Description of the DCO Proposed Development (Volume II)**. For example, the entrance pits are larger than the exit pits for all techniques, therefore it has been assumed within the ES that entrance pits are at both sides of the trenchless crossings. Auger Boring pits are the largest and deepest of all three techniques, therefore it has been assumed that Auger Boring entrance pits will be in place at every trenchless crossing. The exact assessment method used by each technical discipline is explained further in the **Technical Chapters 6 - 18 (Volume II)**.

OPERATION AND MAINTENANCE OF NEWBUILD CARBON DIOXIDE PIPELINE

- 5.12.8. The operation and maintenance of the Newbuild Carbon Dioxide Pipeline has been assessed according to the description in **Section 3.8 of Chapter 3 – Description of the DCO Proposed Development (Volume II)**.
- 5.12.9. Following its installation, the land above the Newbuild Carbon Dioxide Pipeline will be subject to a 24m wide easement and will be protected by restrictive covenants, including limitations to development in that area. The easement needs to be in place to allow the pipeline operator to access the pipeline for future operations and maintenance purposes and to protect the pipeline from damage.

ABOVE GROUND INSTALLATIONS AND BLOCK VALVE STATIONS

- 5.12.10. The locations of the AGIs and BVSs are indicated by a box on **Figure 3-2 – DCO Proposed Development (Volume IV)**. This box depicts a 5m Limit of Deviation in all directions from the edge of the earthworks for each of the AGIs and BVSs. The EIA assumes the worst case location of the AGIs and BVSs within the box to identify the likely significant effects for each topic reported in the ES. The specific worst case location used for each topic is explained within each **Technical Chapter 6-19 (Volume II)**.
- 5.12.11. However, a different approach is used for the three BVSs along the existing Flint Connection to PoA Terminal Pipeline (Cornist Lane BVS, Pentre Halkyn BVS and Babell BVS). As set out in the **Planning Statement (Document reference: D.5.4)**, they are included as part of both the DCO Proposed Development and the TCPA Proposed Development. The EIAs for both applications have been aligned at those three locations. As a Rochdale Envelope approach to EIA cannot be applied for applications under the TCPA

planning regime for a detailed planning application, it has not been used in these locations in the DCO Proposed Development EIA either.

- 5.12.12. The operation and maintenance of AGIs and BVSs have been assessed according to the descriptions in **Section 3.8 of Chapter 3 – Description of the DCO Proposed Development (Volume II)**.

OTHER ABOVE GROUND INFRASTRUCTURE

- 5.12.13. The construction and operation of other above ground infrastructure (including the CP transformer rectifier cabinets and pipeline marker posts) has been assessed according to the descriptions in **Chapter 3 – Description of the DCO Proposed Development (Volume II)**.

CONNECTIONS INFRASTRUCTURE

- 5.12.14. The installation of the connection infrastructure, including power utilities and Fibre Optic Cable connections has been assessed according to the descriptions in **Chapter 3 – Description of the DCO Proposed Development (Volume II)**.

TEMPORARY CONSTRUCTION COMPOUNDS

- 5.12.15. As described in **Chapter 3 - Description of the DCO Proposed Development (Volume II)**, there are three types of temporary Construction Compounds that will be assessed in this ES: Centralised Compound; Localised Compound and Trenchless Crossing Compound.
- 5.12.16. **Figure 3-2 – DCO Proposed Development (Volume IV)** shows the proposed locations of Construction Compounds. The EIA process has informed the design of the Construction Compounds, including avoidance of sensitive areas where practicable. However, notwithstanding this embedded mitigation, the EIA has taken a reasonable worst-case approach to the location and extent of the Construction Compound areas. Therefore, the areas considered in the assessments (**Technical Chapters 6-19 (Volume II)**) and shown in **Figure 3-2 - DCO Proposed Development (Volume IV)** illustrate the spatial parameters, for the purpose of the EIA, within which the Construction Compounds are assessed to be located and positioned. Therefore, the areas shown in **Figure 3-2 - DCO Proposed Development (Volume IV)** identify the locations within which the compounds can be positioned. The anticipated size and footprint of the compounds is stated in **Chapter 3 - Description of the DCO Proposed Development (Volume II)** and are likely to comprise a smaller area than that shown on the figure. Within each compound area, restrictions on layout will be applied in order to protect existing infrastructure, for example, heavy plant will not be sited over existing pipelines.

DECOMMISSIONING

- 5.12.17. The decommissioning has been assessed in line with the description given in **Chapter 3 - Description of the DCO Proposed Development (Volume II)**.

- 5.12.18. The Newbuild Carbon Dioxide Pipeline and Flint Connection to PoA Terminal Pipeline will be filled with nitrogen and left in-situ.
- 5.12.19. Above ground features associated with AGIs and BVSs will be dismantled, cleared and the ground conditions restored to their previous condition. For the purposes of the ES, the method of removal is assumed to be no worse than the construction method.

5.13. COMBINED AND CUMULATIVE EFFECTS

- 5.13.1. In accordance with the DCO EIA Regulations, Advice Note 17 (**Ref. 5.3**), and other best practice guidance, consideration is given to the potential for cumulative and combined effects to arise as a result of the DCO Proposed Development.
- 5.13.2. The following types of Cumulative Effects will be considered within the ES:
- **Intra-project combined effects:** The interaction and combination of different residual (post-mitigation) environmental effects of the DCO Proposed Development affecting the same receptor.
 - **Inter-project cumulative effects:** The residual (post-mitigation) environmental effects of the DCO Proposed Development combining and interacting with the residual environmental effects of committed development/s, including consideration of other parts of the Project affecting the same Receptor.
- 5.13.3. The approach to the Cumulative and Combined Effects assessment is presented in **Chapter 19 - Combined and Cumulative Effects (Volume II)**.

5.14. IN-COMBINATION CLIMATE CHANGE IMPACTS

- 5.14.1. An in-combination climate change impact assessment has been included within each **Topic Chapter 6-18 (Volume II)** to consider the extent to which climate change may alter the effects which have already been identified through the assessment. The methodology is detailed in **Chapter 7 - Climate Resilience (Volume II)**.

5.15. ASSESSMENT OF TRANSBOUNDARY IMPACTS

- 5.15.1. Regulation 32 of the DCO EIA Regulations 2017 (**Ref. 5.8**) sets out the procedural duties required where the SoS deems that an NSIP is likely to have significant effects on the environment in a European Economic Area (EEA) State; or where a EEA State deems that its environment is likely to be significantly affected by an NSIP. Further guidance is provided in Advice Note Twelve (**Ref. 5.12**).

- 5.15.2. The assessments undertaken as part of this ES have determined that no transboundary impacts are likely to be experienced as a result of the DCO Proposed Development.

5.16. STRUCTURE OF THE ENVIRONMENTAL STATEMENT

- 5.16.1. The ES has been structured as follows:

- Volume I: Non-Technical Summary
- Volume II: Main Text:
 - Chapter 1 - Introduction
 - Chapter 2 - The Project
 - Chapter 3 - Description of the DCO Proposed Development
 - Chapter 4 - Consideration of Alternatives
 - Chapter 5 - EIA Methodology
 - Chapter 6 - Air Quality
 - Chapter 7 - Climate Resilience
 - Chapter 8 - Cultural Heritage
 - Chapter 9 - Biodiversity
 - Chapter 10 - Greenhouse Gases
 - Chapter 11 - Land and Soils
 - Chapter 12 - Landscape and Visual
 - Chapter 13 - Major Accidents and Disasters
 - Chapter 14 - Materials and Waste
 - Chapter 15 - Noise and Vibration
 - Chapter 16 - Population and Human Health
 - Chapter 17 - Traffic and Transport
 - Chapter 18 - Water Resources and Flood Risk
 - Chapter 19 - Combined and Cumulative Effects
 - Chapter 20 - Summary of Significant Effects
- Volume III: Supporting Technical Appendices
- Volume IV: Supporting Figures and Plans

5.17. ADDITIONAL DOCUMENTATION

- 5.17.1. There are several other associated documents that have been produced to support the DCO Application and these are referenced and/or appended to the ES where they support assessments. These include:

HABITAT REGULATIONS ASSESSMENT REPORT

- 5.17.2. The overarching aim of the **Habitats Regulations Assessment (HRA) Report (Document reference: D.6.5.6)** is to determine, in view of a site's conservation objectives and qualifying interests, whether a plan, either in isolation and / or in-combination with other plans or projects, could lead to adverse effects on the integrity of a protected Habitats site.
- 5.17.3. Given the proximity of the DCO Proposed Development to several Habitats sites, including the Dee Estuary Special Protection Area / Special Conservation Area, an HRA Report has been prepared. This will provide the SoS and stakeholders with sufficient information to decide whether the DCO Proposed Development will lead to Likely Significant Effects (LSE) on one or more Habitats site(s). Where LSE are identified, a detailed assessment will provide the SoS with sufficient information to assess whether the DCO Proposed Development could result in adverse effects on the integrity of relevant Habitat's sites.
- 5.17.4. Whilst the over-arching objectives of EIA and HRA are similar, their legislative basis, scope, level of detail and terminology vary. As such, these processes will be undertaken separately. However, the scope presented within the ES has been developed to ensure that the needs of these processes have been considered to ensure a coordinated assessment.

BIODIVERSITY NET GAIN REPORT

- 5.17.5. The Biodiversity Net Gain (BNG) assessment is based on field survey data from 2020 to 2022, which provided a baseline habitat database, detailing habitat types present, their area (ha) and their geographic distribution. The assessment includes the Rivers and Stream BNG metric which has some overlaps with the **Water Framework Directive Assessment (presented in Appendix 18.3, Volume III)**.
- 5.17.6. Following industry best practice guidance, the **Biodiversity Net Gain Report (Document Ref: D.6.5.12)** has analysed the habitats to be retained, enhanced, created, or lost within the Survey Area. It has identified requirements for habitat compensation and demonstrates biodiversity benefits resulting from the DCO Proposed Development. Only impacts within the footprint of the Newbuild Infrastructure Boundary have been assessed. Irreplaceable habitats and statutory designated sites have been excluded from BNG calculations. Any habitat that cannot be recreated elsewhere, within a reasonable timeframe, is considered to be an irreplaceable habitat. Statutory designated sites located within the footprint of the DCO Proposed Development are also excluded from BNG calculations. Refer to the **Biodiversity Net Gain Report (Document Ref: D.6.5.12)** for further details.

WATER FRAMEWORK DIRECTIVE ASSESSMENT

- 5.17.7. The **Water Framework Directive (WFD) Assessment (Appendix 18.3, Volume III)** has screened for both the potential construction and operational impacts of the DCO Proposed Development upon WFD water bodies for main rivers, canals, ordinary watercourses, transitional waterbodies and objectives from the North West and Dee River Basin Management Plans and groundwater resources. This includes identifying likely risks to biodiversity, the biological, physico-chemical and hydromorphological quality of WFD water bodies (including River Dee, River Gowy, Stanney Mill Brook, Shropshire Union Canal, Finchetts Gutter, Sandycroft Drain, Wepre Brook), nearby ordinary watercourses and groundwater quality, and the likely ability of good-practice methods to manage risks associated with pollutants typically experienced during the construction and operational phase.

FLOOD RISK ASSESSMENT AND FLOOD CONSEQUENCE ASSESSMENT

- 5.17.8. A **Flood Risk Assessment (FRA) (Appendix 18.4, Volume III)** and a **Flood Consequence Assessment (FCA) (Appendix 18.5, Volume III)** have been prepared to support the EIA in accordance with the National Planning Policy Framework (NPPF) (**Ref. 5.13**) and Technical Advice Note (TAN)15: development and flood risk (2004) (**Ref. 5.14**). The FRA and FCA have assessed the potential implications of the DCO Proposed Development on flood risk to people and property elsewhere, as well as assessing the potential risk of flooding to the DCO Proposed Development. A strategic approach to the potential impacts and sensitive receptors along the route has been undertaken due to the scale of the project. A more detailed assessment has been undertaken if required at specific locations (for example, AGIs) depending on the expected level of flood risk and potential receptors.


OUTLINE SURFACE WATER DRAINAGE STRATEGY REPORT

- 5.17.9. An **Outline Surface Water Drainage Strategy Report (Document Ref: D.6.5.13)** has been prepared for permanent features of the DCO Proposed Development, including the AGIs and BVSSs. The Outline Drainage Strategy has been developed to manage surface water runoff, taking into account potential climate change impact with the overall aim to reduce the rate of surface water run-off from the proposed sites and limit the impact.
- 5.17.10. Sustainable drainage systems (SuDS) treatment methods have been identified and optimised to satisfy the pollution control requirements stated in various policies. The report includes conceptual drainage layout and calculations as well as plans for monitoring, management, operation and maintenance.

OUTLINE CONSTRUCTION TRAFFIC MANAGEMENT PLAN AND INTERIM WORKER TRAVEL PLAN

- 5.17.11. An **Outline Construction Traffic Management Plan (Document Reference: D.6.5.3)** has been prepared to provide details of procedures for construction related traffic; including number of vehicles; access strategy; construction traffic routes; the frequency and timing of movements; worker hours and shift patterns; parking, and high level reporting of Abnormal Indivisible Loads. An **Interim Worker Travel Plan (Appendix 17-14, Volume III)** has been prepared to focus on reducing the number of single occupancy car trips associated with construction workers travelling to and from the site.

5.18. REFERENCES

- **Ref. 5.1:** PINS. (2017). Advice Note Three: EIA Notification and Consultation. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-three-eia-notification-and-consultation-2/>
- **Ref. 5.2:** PINS. (2020). Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping. Available at: from <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advisenote-seven-environmental-impact-assessment-process-preliminary-environmental-informationand-environmental-statements/>
- **Ref. 5.3:** PINS. (2019). Advice Note Seventeen: Cumulative Effects Assessment relevant to nationally significant infrastructure projects. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/>
- **Ref. 5.4:** Welsh Government. Technical Advice Notes. Available at: <https://gov.wales/technical-advice-notes>
- **Ref. 5.5** – Flintshire County Council. Supplementary Planning Guidance Note No.21 Environmental Impact Assessments. 2017. Available at: <https://www.flintshire.gov.uk/en/PDFFiles/Planning/Adopted-SPGNs/SPGN-No-21.Environmental-Impact-Assessments.pdf>
- **Ref. 5.6** – National Planning Practice Guidance (PPG) Available at: <https://www.gov.uk/government/collections/planning-practice-guidance>
- **Ref. 5.7:** IEMA. (2015). IEMA EIA Guide to Shaping Quality Development. Available at:

- **Ref. 5.8:** HM Government. (2017). The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

- **Ref. 5.9:** HM Government. (2008). The Planning Act 2008
- **Ref. 5.10:** IEMA. (2016). Delivering Quality Development. Retrieved from [REDACTED]
- **Ref. 5.11:** PINS. (2018). Advice Note Nine: Rochdale Envelope. Retrieved from <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advicenote-nine-rochdale-envelope/>
- **Ref. 5.12:** PINS. (2020). Advice Note Twelve: Transboundary Impacts and Process. Retrieved from <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advicenote-twelve-transboundary-impacts-and-process/>
- **Ref. 5.13:** NPPF. (2021). National Planning Policy Framework. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf
- **Ref. 5.14:** TAN. (2004). Technical Advice Note (TAN)15: development and flood risk. Retrieved from <https://gov.wales/technical-advice-note-tan-15-development-and-flood-risk-2004>