



Humber Low Carbon Pipelines

Preliminary Environmental Information Report
Volume II Chapter 4 EIA Methodology
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4. EIA Methodology

4.1 Introduction

- 4.1.1 This Chapter sets out the overarching approach to the Environmental Impact Assessment (EIA) for the Project. Detailed methodologies adopted for each environmental topic are provided within the respective chapters of this report. The approach to the assessment has been informed by best practice guidance, as set out within Planning Inspectorate (PINS) Advice Note Seven (Ref 4.1).
- 4.1.2 This Preliminary Environmental Information Report (PEIR) contains the information in Regulation 14(2)(a) - (f) and Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations') (Ref 4.2) as set out in Table 1.1 of Chapter 1: Introduction (Volume II).
- 4.1.3 EIA is the process through which the impacts upon the environment as a result of the Project are assessed and where unavoidable, appropriate proposals are developed in order to mitigate likely significant effects. The Environmental Statement (ES) is the document within which the EIA process is reported including identified likely significant effects and associated mitigation measures.
- 4.1.4 In line with Regulation 14(4)(a) of the EIA Regulations 2017, the EIA will be undertaken by a suitably qualified project team and the qualifications and experience of the team will be set out in the ES.
- 4.1.5 In preparing this PEIR, reference has been made to the EIA Scoping Opinion received from PINS (on behalf of the Secretary of State (SoS)) (20 May 2022) and the advice contained within it regarding assessment methodology, topics and the presentation of the ES. Please refer to Appendix 1.2: EIA Scoping Opinion (Volume III) for further detail.

4.2 Consultation and Engagement

- 4.2.1 As part of the EIA, consultation and engagement is ongoing with a range of statutory and non-statutory consultees. At present, these include:
- Local authorities;
 - Parish councils;
 - Statutory nature conservation bodies;
 - Statutory utilities; and
 - Internal drainage boards.
- 4.2.2 The purpose of consultation and engagement with statutory and non-statutory consultees is to brief them on the Project, seeking baseline data, agreeing the scope of technical assessments and seeking their feedback on the proposals. Any items agreed will be identified within the technical chapters. Technical engagement will continue throughout the EIA process and Statements of Common Ground (SoCG) will be developed and finalised during Examination.

- 4.2.3 Non-statutory consultation was undertaken in September and October 2021. This PEIR forms part of the statutory consultation being undertaken in Q4 2022, as required by the Planning Act 2008 (Ref 4.3) and the EIA Regulations. The PEIR has been developed to inform consultees with a preliminary assessment of the likely significant environmental effects of the Project.
- 4.2.4 Consultation events will commence in October 2022. These provide the opportunity to offer feedback and/or ask questions about the PEIR. It should be noted that if the dates of the Statutory Consultation period (and any associated events) change, this will be advertised accordingly.

4.3 Defining the Study Area

- 4.3.1 The Study Area for each environmental topic is set out within its respective chapter of this report (see Chapters 5 – 20).

4.4 Establishing Baseline Conditions

- 4.4.1 Likely significant environmental effects will be described in the ES in relation to the extent of changes to the existing baseline environment as a result of the construction, operation and/or decommissioning of the Project. The baseline environment includes the existing environmental characteristics and conditions, based on surveys undertaken and information available at the time of the assessment.
- 4.4.2 Baseline conditions will be established by:
- Site visits and surveys;
 - Data from third party sources;
 - Desk based studies; and
 - Modelling (if required).
- 4.4.3 The baseline conditions used in the ES will vary depending on the timing of surveys or the date at which data sources have been produced/assessed. Where appropriate, existing baseline data collected may be used to inform the assessment if it is deemed to remain relevant. The origins of all third-party data will be clearly outlined, alongside any limitations and assumptions.
- 4.4.4 Baseline data which is deemed to be confidential in nature, such as that relating to protected species, will be provided in separate confidential appendices to the ES due to the sensitivity of such species records.

Limitations

- 4.4.5 The period of validity for each set of baseline data collected will be set out in the ES and, where appropriate, the requirement for any repeat surveys will be specified, such as for species data.

4.5 Establishing Future Baseline Conditions

- 4.5.1 The ES will include an outline of the likely evolution of the existing baseline without implementation of the Project based on available information and knowledge. The future baseline scenario will be clearly set out and described within the ES.
- 4.5.2 Regulation 14(2)(d) of the 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”.
- 4.5.3 Further detail around the consideration of alternatives is set out in Chapter 3: Consideration of Alternatives (Volume II).

4.6 Approach to Mitigation

- 4.6.1 Institute of Environmental Management and Assessment (IEMA) issued ‘Shaping Better Quality Development’ in November 2015 (Ref 4.4) and ‘Delivering Better Quality Development’ in July 2016 (Ref 4.5). In accordance with these guidance documents, three types of mitigation will be identified and used within the ES:
- Primary mitigation – modifications to the location or design made during the pre-application phase that are an inherent part of the Project;
 - Secondary mitigation – commitments made by the Applicant that will require further activity to achieve the anticipated outcome. The effectiveness of such measures will be assessed within the ES and appropriate mitigation will be secured by the Development Consent Order (DCO) or other suitable mechanism; and
 - 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 Project and, where appropriate, will be set out in the outline Construction Environmental Management Plan (CEMP).
- 4.6.2 The primary mitigation measures will be outlined in Chapter 2: Project Description in the ES, and secondary and tertiary mitigation will be presented within the ES chapters for each environmental topic and the outline CEMP where appropriate. The assessment of potential likely significant environmental effects will take primary and tertiary mitigation into account.
- 4.6.3 Following assessment of the effects of the Project, any further mitigation measures (secondary mitigation) will be outlined within the technical chapters. These mitigation measures would further reduce any adverse effects or enhance beneficial effects. The assessment of residual effects will take the secondary mitigation into account.
- 4.6.4 A Register of Commitments will document all mitigation to ensure suitable identification and monitoring of mitigation beyond the submission of the DCO. The delivery of these mitigation measures will be secured through requirements in the draft DCO and other suitable mechanisms, as appropriate.

- 4.6.5 Protective provisions are a further mechanism through which mitigation measures to protect the interests of utility owners will be secured. Relevant protective provisions will be included within the draft DCO as required.

Construction Environmental Management Plan

- 4.6.6 The draft DCO will contain a requirement for a CEMP to secure the relevant mitigation items contained within a Register of Commitments. The CEMP would be the means of controlling the construction works and set out monitoring requirements, with the objective of ensuring that the effect of the construction works on people and the natural environment are reduced insofar as reasonably practicable. The CEMP will be based on the outline CEMP to be submitted with the DCO Application.
- 4.6.7 The CEMP will also include tertiary mitigation required during construction planning, prior to commencement and during construction such as Best Practical Means (BPM) to reduce noise and vibration and dust suppression measures.

Decommissioning Environmental Management Plan

- 4.6.8 The Decommissioning Environmental Management Plan (DEMP) would set out a series of measures, based on environmental best practice guidance from a range of environmental disciplines, to control the environmental effects of the decommissioning of the Project. The DEMP will be secured through the Register of Commitments.

Monitoring

- 4.6.9 The 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 will be detailed within each of the topic chapters of the ES and detailed within a Register of Commitments, secured by requirements in the draft DCO, and the results of any monitoring would be shared with the relevant organisations as appropriate.

4.7 Assessment of Likely Significant Effects

- 4.7.1 The ES will report on the likely significant effects of the construction, operation (including maintenance) and decommissioning phases of the Project.
- 4.7.2 The design of the Project will continue to be progressed and there will be a need to continue refining the design up to the detailed design stage, requiring a certain level of flexibility to be maintained. Therefore, in line with PINS Advice Note Nine (Using the Rochdale Envelope) (Ref 4.6) a limit of deviation and a parameter-based approach (the 'Rochdale Envelope' approach) will be adopted to define the envelopes within which the construction and operation of the Project would be undertaken.
- 4.7.3 The limits of deviation and parameters will be defined within the Application drawings and the draft DCO. The limits of deviation and parameters-based approach presents the maximum envelope within which the built development may be undertaken, and an assessment of the limit of deviation and parameters ensures a 'worst case' assessment of the full area within which the Project could be brought forward. This ensures the assessment of environmental effects associated with the Project will be the worst case, and that the actual development to be carried out within the limit of deviation parameters would be no worse than the effects reported in the ES.

- 4.7.4 The detailed design and construction methodology for the Project will be developed within the limits of deviation and parameters without the need for further assessment (though design approvals will be required to confirm compliance with the assessed limit of deviation and parameters).
- 4.7.5 The following criteria will be considered when determining significance:
- Likelihood of occurrence;
 - Geographical extent;
 - Adherence of the proposals to legislation, planning and marine policy;
 - 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 (to be defined within the ES);
 - Whether the effect is short, medium, or long-term in duration (to be defined within the ES);
 - Inter-relationship between effects (both cumulatively and in terms of potential effect interactions); and
 - The outputs of stakeholder and public engagement.
- 4.7.6 The methodology for assessing the significance of an effect will vary between environmental factors but, in principle, it will be based on the environmental sensitivity (or value / importance) of a receptor and the magnitude of change from baseline conditions. Topic-specific guidance requires that specific criteria or scales for determining significance are utilised; more specifically, chapters requiring bespoke criteria include:
- Chapter 5: Agriculture and Soils (Volume II);
 - Chapter 6: Air Quality (Volume II);
 - Chapter 7: Ecology and Biodiversity (Volume II);
 - Chapter 8: Climate Resilience (Volume II);
 - Chapter 11: Landscape and Visual (Volume II);
 - Chapter 12: Noise and Vibration (Volume II);
 - Chapter 14: Human Health and Wellbeing (Volume II);
 - Chapter 15: Traffic and Transport (Volume II);
 - Chapter 16: Waste and Materials (Volume II);
 - Chapter 18: Major Accidents and Disasters (Volume II);
 - Chapter 19: Greenhouses Gases (Volume II); and
 - Chapter 20: Assessment of Cumulative Effects (Volume II).

- 4.7.7 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. 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 using the matrix in Table 4.1.

Table 4.1: Matrix for Determining the 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

- 4.7.8 When a range has been included in Table 4.1, professional judgment will be used to define the significance. Only Moderate and Major effects will be considered to be significant.
- 4.7.9 Tables which summarise the likely significant effects will be provided. These tables will outline sensitive receptors, mitigation measures and residual effects. A distinction will be made between direct and indirect; short, medium and long-term; permanent and temporary; and positive and negative effects.
- 4.7.10 The ES will include details of difficulties (for example, technical deficiencies) encountered compiling the required information and the main uncertainties involved.

4.8 Assessment of Cumulative Effects

- 4.8.1 In accordance with the EIA Regulations, consideration is given to the potential for cumulative effects to arise as a result of the Project.
- 4.8.2 The consideration of cumulative effects is an integral part of undertaking an EIA and understanding the potential changes perceived by receptors. It plays an important role in considering the wider picture of potential significant environment effects that may arise as a result of the Project.
- 4.8.3 There is no widely accepted methodology or best practice for the assessment of cumulative effects, although there are several guidance documents available including PINS Advice Note Seventeen (Ref 4.7).
- 4.8.4 The assessment will consider the following types of cumulative effects:
- Intra-project combined effects - the interaction and combination of different residual (post-mitigation) environmental effects of the Project affecting the same Receptor.

For example, visual and noise effects during construction affecting the same residential dwelling; and

- Inter-project cumulative effect - the residual (post-mitigation) environmental effects of the Project combining and interacting with the residual environmental effects of committed development(s) affecting the same Receptor. For example, cumulative construction traffic effects upon a residential dwelling from the Project and a proposed housing development.

4.8.5 The approach to the Cumulative Effects assessment is presented in Chapter 20: Assessment of Cumulative Effects (Volume II).

4.9 Assessment of Transboundary Impacts

4.9.1 Regulation 32 of the EIA Regulations sets out the procedural duties required where the Secretary of State deems that a Nationally Significant Infrastructure Project (NSIP) is likely to have significant effects on the environment in a European Economic Area (EEA) State; or where an EEA State deems that its environment is likely to be significantly affected by an NSIP. Further guidance is provided in PINS Advice Note Twelve (Ref 4.8).

4.9.2 However, it is not anticipated that the Project will have significant transboundary effects. This position is bolstered by PINS' EIA Scoping Opinion within which it is stated that *"the likelihood of transboundary effects resulting from the Proposed Development is so low that it does not warrant the issue of a detailed transboundary screening"* (Ref 4.9, pg.,10). Therefore, at present, transboundary impacts will not be assessed within this PEIR or the subsequent ES.

4.9.3 This will be closely monitored, and the Applicant will be mindful of any new or materially different information which may introduce transboundary impacts. If this were to occur, the necessary information relevant to transboundary impacts, and the associated assessment, would be provided within the ES.

4.10 Structure of the Preliminary Environmental Information Report

4.10.1 The PEIR has been structured as follows:

- Volume I: Non-Technical Summary;
- Volume II: Main Text:
 - Chapter 1: Introduction;
 - Chapter 2: Project Description;
 - Chapter 3: Consideration of Alternatives;
 - Chapter 4: EIA Methodology;
 - Chapter 5: Agriculture and Soils;
 - Chapter 6: Air Quality;
 - Chapter 7: Ecology and Biodiversity;
 - Chapter 8: Climate Resilience;

- Chapter 9: Geology and Hydrogeology;
- Chapter 10: Cultural Heritage;
- Chapter 11: Landscape and Visual;
- Chapter 12: Noise and Vibration;
- Chapter 13: Socio-economics, Tourism and Recreation;
- Chapter 14: Human Health and Wellbeing;
- Chapter 15: Traffic and Transport;
- Chapter 16: Waste and Materials;
- Chapter 17: Hydrology and Land Drainage;
- Chapter 18: Major Accidents and Disasters;
- Chapter 19: Greenhouse Gases; and
- Chapter 20: Assessment of Cumulative Effects.
- Volume III: Supporting technical appendices; and
- Volume IV: Supporting figures.

4.11 Coordination of Assessments

- 4.11.1 A number of additional assessments that will not directly form part of the ES but will be relied upon and referred to within the ES, will be completed. Relevant documents will be submitted in support of the Application. These will be as follows:

Biodiversity Net Gain Assessment

- 4.11.2 For information regarding the Biodiversity Net Gain assessment, please refer to Chapter 7: Ecology and Biodiversity (Volume II).

Habitats Regulations Assessment

- 4.11.3 The overarching aim of the Habitats Regulations Assessment (HRA) 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 an International Site. Given the proximity of the Project to several International Sites, a HRA will be prepared. This will provide the consenting authority with sufficient information to decide whether the Project will lead to Likely Significant Effects (LSE) on International Sites.
- 4.11.4 Where LSE are identified, a detailed assessment will be provided to assess whether the proposals could result in adverse effects on the integrity of relevant international sites. Whilst the over-arching objectives of EIA and HRA are similar, their scope, level of detail and terminology vary. As such, these processes will be undertaken separately. However, the scope presented within this PEIR has been developed to ensure that the needs of these processes have been considered to ensure a coordinated assessment.

Water Framework Directive Screening Report

- 4.11.5 The Water Framework Directive (WFD) Screening Report will screen for both the potential construction and operational impacts of the Project upon the relevant WFD quality elements for several surface waterbodies, a transitional waterbody, a coastal waterbody and objectives of the Humber River Basin Management Plan, and groundwater resources.
- 4.11.6 This includes identifying likely risks to biodiversity, the biological, physio-chemical and hydromorphological quality of watercourses and groundwater quality and quantity, and the likely ability of good-practice methods to manage risks associated with pollutants typically experienced during construction and during the operational phase.
- 4.11.7 The WFD Screening Report will determine the need for a full WFD assessment. If required, the scope for a WFD assessment will be discussed with the Environment Agency.

Flood Risk Assessment

- 4.11.8 A Flood Risk Assessment (FRA) will be prepared to support the EIA in accordance with the National Planning Policy Framework (NPPF) (Ref 4.10). The FRA will assess the potential implications of the Project on flood risk to people and property elsewhere, as well as assessing the potential risk of flooding to the Project.
- 4.11.9 A strategic approach to the potential impacts and sensitive receptors along the route will be undertaken due to the scale of the Project. However, a more detailed assessment will be undertaken if required at specific locations of the proposals (e.g., AGIs) depending on the expected level of flood risk and potential receptors.

Assessment of Heat, Light and Radiation

- 4.11.10 Schedule 4 of the EIA Regulations requires a consideration of the likely significant effects of the Project resulting from the emission of heat, light and radiation.
- 4.11.11 The pipelines will be below ground, and no relevant pathway or receptors have been identified that could lead to significant effects from the temperature of the carbon dioxide or hydrogen. This was agreed with PINS within the EIA Scoping Opinion and therefore, heat has been scoped out of further assessment.
- 4.11.12 Lighting will be considered in terms of effects on ecology and landscape and visual impact within the relevant Chapters in the ES (Chapter 7 and 11 respectively).
- 4.11.13 No significant sources of radiation are anticipated. This was agreed with the PINS within the EIA Scoping Opinion and therefore, radiation has been scoped out of further assessment.

Electric and Magnetic Fields (EMFs)

- 4.11.14 Schedule 4, Paragraph 5 (f) of the EIA Regulations requires that risks to human health are considered. Exposure to EMFs have the potential to cause harm to the human health, including general health implications such as headaches, anxiety and fatigue. Whilst there are no statutory regulations in the UK that limit the exposure of the general public to power-frequency EMFs, responsibility for implementing appropriate measures for the protection of the public lies with the Applicant.

- 4.11.15 The pipelines would be below ground, and no relevant pathway or receptors have been identified that could lead to significant effects from EMFs.

4.12 References

- Ref 4.1 The Planning Inspectorate (2020). *Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements*. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/> (Accessed: 25 May 2022).
- Ref 4.2 HM Government (2017) *The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations')*. Available at: <https://www.legislation.gov.uk/uksi/2017/572/contents/made> (Accessed: 25 May 2022).
- Ref 4.3 HM Government (2008) *Planning Act 2008*. Available at: <https://www.legislation.gov.uk/ukpga/2008/29/contents> (Accessed: 1 June 2022).
- Ref 4.4 Institute of Environmental Management and Assessment (IEMA) (2016). *Guide to Shaping Better Quality Development*.
- Ref 4.5 Institute of Environmental Management and Assessment (IEMA) (2015). *Environmental Impact Assessment Guide to Delivering Quality Development*.
- Ref 4.6 The Planning Inspectorate (2018) *Advice Note Nine: Rochdale Envelope*. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-nine-rochdale-envelope/> (Accessed: 1 June 2022).
- Ref 4.7 The Planning Inspectorate (2019). *Advice Note Seventeen: Cumulative Effects Assessment* Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/> (Accessed: 1 June 2022).
- Ref 4.8 The Planning Inspectorate (2020). *Advice Note Twelve: Transboundary Impacts and Process*. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-twelve-transboundary-impacts-and-process/> (Accessed: 2 June 2022).
- Ref 4.9 The Planning Inspectorate (2022). *Scoping Opinion: Proposed Humber Low Carbon Pipelines*. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN070006/EN070006-000025-HLCP%20-%20Scoping%20Opinion.pdf> (Accessed: 18 July 2022).
- Ref 4.10 Ministry of Housing, Communities and Local Government (2021). *National Planning Policy Framework*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf (Accessed: 18 July 2022).

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