

H2Teesside Project

Environmental Statement

Volume III – Appendices

Appendix 1E: Scoping Opinion Responses

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The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended)

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



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1E.0 APPENDIX 1E: SCOPING OPINION RESPONSES

1E.1 Overview

1E.1.1 This technical Appendix of the Environmental Statement (ES) summarises the issues raised in the Secretary of State's Scoping Opinion on the Project (Appendix 1B: Scoping Opinion (ES, Volume III, EN070009/APP/6.4) and describes how the issues raised by the Planning Inspectorate and other interested consultation bodies have been taken into account during the environmental assessment and design development of the Project.

1E.1.2 Table 1E-1 lists the issues raised by the Planning Inspectorate and other consultation bodies, with subsequent columns stating how this has been addressed in the ES.

Table 1E-1: Scoping Opinion Responses

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
Chapter 2: Assessment Methodology	The Inspectorate	<u>Assessment methodology and significance criteria</u> The Scoping Report states that methods used in assessment will be outlined in each aspect chapter by reference to published standards, guidelines, and criteria. For some aspect sections in the Scoping Report, no reference is made to the standards proposed to be used so the Inspectorate is not able to provide substantive comment. The ES should describe the standards and guidelines used for each aspect and explain why these are appropriate to the assessment.	The ES Report includes information regarding the relevant standards and guidelines for each topic, in Chapters 8 to 23 (ES Volume I, EN070009/APP/6.2).
Chapter 2: Assessment Methodology	The Inspectorate	<u>Baseline conditions</u> The Inspectorate notes that Main Sites A and B appear to partially overlap with the Order Limits of the NZT project. Any implications for the future baseline arising in the event of commencement of development authorised by the NZT DCO, should it be made, should be described in the ES.	Due to the expected timeframes for the project, Net Zero Teesside (NZT) is considered within the cumulative effects assessment reported in Chapter 23: Cumulative and Combined Effects (ES Volume I, EN070009/APP/6.2), rather than being considered as part of the future baseline.
Chapter 2: Assessment Methodology	The Inspectorate	<u>Transboundary</u> The Inspectorate on behalf of the SoS has considered the Proposed Development and concludes that the Proposed Development is unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State. In reaching this conclusion the Inspectorate has identified and considered the Proposed Development's likely impacts including consideration of potential pathways and the	It is noted that the Inspectorate considers that the likelihood of transboundary effects resulting from the Proposed Development is low, therefore not warranting the issue of a detailed transboundary screening.

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		<p>extent, magnitude, probability, duration, frequency and reversibility of the impacts.</p> <p>The Inspectorate considers 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. However, this position will remain under review and will have regard to any new or materially different information coming to light which may alter that decision.</p> <p>Note: The SoS' duty under Regulation 32 of the 2017 EIA Regulations continues throughout the application process.</p> <p>The Inspectorate's screening of transboundary issues is based on the relevant considerations specified in the Annex to its Advice Note Twelve, available on our website at http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/.</p>	<p>The Applicant also notes that this will remain under review.</p>
Chapter 2: Assessment Methodology	The Inspectorate	<p><u>Study areas</u></p> <p>Each ES aspect chapter should describe the study area used in the assessment. It should explain how the extent of the study area has been established by reference to guidelines and discussions with statutory consultation bodies as relevant. The ES should include a figure(s) to identify the final study areas for each aspect, including the location of receptors considered.</p>	<p>Study areas and receptors are described in the relevant chapters of this ES (Chapters 8 – 23 (ES Volume I, EN070009/APP/6.2)). This includes an explanation of how they have been established. They are also shown on the plans accompanying the ES (ES Volume II, EN070009/APP/6.3).</p>

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Chapter 2: Assessment Methodology	The Inspectorate	<p><u>Matters scoped into the assessment</u></p> <p>For the avoidance of doubt, as there is no summary table identifying matters scoped in or out of the aspects listed below, this Scoping Opinion is adopted on the basis that the impacts on receptors listed at the specified paragraphs in the Scoping Report are scoped into the assessment subject to the Inspectorate’s comments at 1.0.4:</p> <ul style="list-style-type: none"> • Surface water, flood risk and water resources – paragraph 6.3.20. • Geology, hydrogeology and contaminated land – paragraph 6.4.88. • Ecology and nature conservation – paragraph 6.6.18. • Marine ecology – paragraph 6.8.24. • Traffic and transportation – paragraph 6.9.10. • Landscape and visual amenity – paragraph 6.10.8. • Cultural heritage – paragraph 6.11.10. • Socio-economics and land use – paragraph 6.12.21. • Climate change – paragraph 6.13.15. • Materials and waste – paragraph 6.15.7. 	<p>This is noted. In addition to the topics outlined in the Scoping Opinion, the following topics have also been scoped in and assessed in the ES:</p> <ul style="list-style-type: none"> • air quality; • noise and vibration; • ornithology; • major accidents and disasters; • population and human health; and • cumulative and combined effects.
Chapter 2: Assessment Methodology	The Inspectorate	<p><u>Impact from de watering</u></p> <p>The Scoping Report does not specify if dewatering would be required in the construction of the Proposed Development. The ES should describe the likely need for dewatering, identify sensitive receptors which may be affected and assess any likely significant effects.</p> <p>The ES and associated management plan documents should set out the minimum environmental requirements that have been assessed and that</p>	<p>Dewatering will be required for the construction of the Proposed Development. The ES describes the need for it, identifies sensitive receptors which may be affected, assesses any likely significant effects and recommends appropriate mitigation measures where required.</p>

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		contractors will be required to apply when managing dewatering discharges.	See Chapter 5: Construction programme and Management and Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume II, EN070009/APP/6.3).
Chapter 2: Assessment Methodology	The Inspectorate	<p><u>CEMP</u> The Inspectorate welcomes the commitment to submit a framework CEMP with the ES. In addition to the matters listed at paragraph 3.13.7 of the Scoping Report, the Inspectorate advises that the framework CEMP should contain details of all measures referred to in the ES required to mitigate construction impacts, unless these are secured by alternative mechanisms (in which case this should be explained, and the alternative mechanism confirmed).</p> <p>The ES should clearly describe the efficacy of proposed measures and any residual effects following implementation, and it should also assess any inter-related effects of the mitigation measures, e.g. the presence of any noise screening required to be considered in landscape and visual impact assessment.</p>	<p>This is noted and the requested information (including measures secured by alternative mechanisms) is included within the Framework Construction Environmental Management Plan (CEMP) which accompanies the ES at Appendix 5A: Framework CEMP (ES Volume III, EN070009/APP/6.4).</p> <p>The ES clearly describes the efficacy of the proposed measures and any residual effects following implementation, and any effects associated with the mitigation measures themselves.</p>
Chapter 2: Assessment Methodology	The Inspectorate	<p><u>Operational environmental management plan (OEMP)</u> The Scoping Report references use of an environmental management plan during operation to mitigate potential significant adverse effects. The Applicant should provide a draft/ outline version of an OEMP containing</p>	The Scoping Report (Appendix 1A: EIA Scoping Report (ES Volume III, EN070009/APP/6.4)) references the requirement of environmental management during operation and not the preparation of a draft

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		<p>details of any measures referred to in the ES and demonstrate how these will be secured through the dDCO or an alternative legal mechanism.</p>	<p>Operational Environmental Management Plan (OEMP) at this stage. An OEMP does not form part of the DCO Application. The Applicant and appointed Contractor will be responsible for the preparation of an OEMP prior to the start of the operational phase of the Proposed Development.</p>
<p>Chapter 2: Assessment Methodology</p>	<p>The Inspectorate</p>	<p><u>Avoidance / mitigation measures</u> The Scoping Report makes reference to the use of avoidance measures to reduce effects to not significant (e.g. avoidance of tree / linear habitat feature removal). The ES should set out any measures relied upon to avoid significant effects and demonstrate how these will be secured through the dDCO or other legal mechanism.</p>	<p>The relevant Chapters of the ES (Chapters 8 to 23 (ES Volume I, EN070009/APP/6.2)) clearly outline embedded and proposed essential mitigation measures and how they will be secured.</p>
<p>Chapter 2: Assessment Methodology</p>	<p>The Inspectorate</p>	<p><u>Monitoring</u> The Scoping Report references monitoring of mitigation in several aspect sections. Where the ES concludes that monitoring is required, the Applicant should provide a document that describes the monitoring activities, who has responsibility for them, frequency, any trigger points for remedial action and how it is secured through the dDCO or other legal mechanism.</p>	<p>Mitigation monitoring recommended is detailed within the relevant chapter(s) of the ES and the Framework CEMP (ES Volume III, EN070009/APP/6.4). The Outline Landscape and Biodiversity Management Plan (LBMP) (EN070009/APP/5.9) details commitments to manage the planting, protection and enhancement of biodiversity in and around the</p>

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			Proposed Development Site. The OLBMP includes design plans, specifications, monitoring requirements, and responsibilities.
Chapter 4: Proposed Development	The Inspectorate	<p><u>CO₂ export via Northern Endurance Partnership (NEP) infrastructure.</u></p> <p>The Scoping Report states that CO₂ from the Proposed Development would be exported to an offshore facility via NEP infrastructure on the adjacent Net Zero Teesside (NZN) site. NZN development consent order (DCO) application was due to be determined by the Secretary of State on 10 May 2023 but the Inspectorate notes that a new deadline of no later than 14 September 2023 was set on 9 May 2023.</p> <p>The ES should clearly describe the relationship between the Proposed Development and any connected projects including the offshore CO₂ facility. This should include the extent to which the Proposed Development is dependent on their delivery and the development timelines of the other projects, with an explanation of how these will be coordinated.</p>	This information has been included within Chapter 4: Proposed Development (ES Volume I, EN070009/APP/6.2).
Chapter 4: Proposed Development	The Inspectorate	<p><u>Natural resources</u></p> <p>The Scoping Report states that natural gas, oxygen (O₂), nitrogen (N₂) and water will be required for the operational phase of the Proposed Development. Paragraph 2.1.2 states that O₂ and N₂ will be from local sources; an alternative option for O₂ and N₂ supply from an air separation unit (ASU) is also identified (paragraph 3.1.1).</p> <p>The ES should include an estimate of the likely volume of the different natural resources, including those identified above, that will be required in the operation of the Proposed Development, how these will be</p>	Chapter 4: Proposed Development (ES Volume I, EN070009/APP/6.2) includes a description of how these resources will be transported to the site and an assessment of likely significant effects is included in Chapters 8-23 (ES Volume I, EN070009/APP/6.2).

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		transported to the site, and an assessment of any likely significant effects arising from the use of such resources.	
Chapter 4: Proposed Development	The Inspectorate	<p><u>Carbon Capture</u></p> <p>The Scoping Report states that CO₂ would be captured at a rate in excess of 95%, which is anticipated to be secured through an environmental permit. Should the draft DCO (dDCO) allow for the generating station component to operate independently of the carbon capture, a worst case assessment of likely significant effects should be undertaken. If assessments in the ES rely on a capture rate of 95% it should be clear how this would be secured in the dDCO.</p>	<p>We appreciate that the Production Facility on its own without carbon capture would be a reasonable worst case, however, due consideration is not given to this scenario during normal operations (i.e., excluding commissioning and start up) as this does not align with bp's strategy of transforming to an integrated energy company. Teesside is at the forefront of efforts to achieve the government's ambitious target for the UK to be the world's first major economy to be net zero, by 2050, therefore the Proposed Development without carbon capture is not a viable option being considered and this will be secured by a requirement in the DCO.</p>
Chapter 4: Proposed Development	The Inspectorate	<p><u>Flexibility</u></p> <p>The Inspectorate notes the Applicant's desire to incorporate flexibility into their dDCO and its intention to apply a 'Rochdale Envelope' approach for this purpose. This includes options for the various required connection corridors required as part of the project, eg CO₂ export, hydrogen, natural</p>	<p>These comments are noted and Planning Inspectorate Advice Note 9: Rochdale Envelope has been considered.</p>

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		<p>gas, electrical and water connection. Paragraph 3.1.7 states that it is expected that optionality would be reduced, and preferred options confirmed prior to submission of an application. Paragraph 3.1.8 describes that some aspects and features will not be confirmed until an engineering, procurement and construction contractor has been appointed, ie post grant of any DCO. In this instance, it is stated that the Rochdale Envelope will be adopted to define appropriate parameters for use in the EIA.</p> <p>The Applicant should make every attempt to narrow the range of options and explain clearly in the ES which elements of the Proposed Development have yet to be finalised and provide the reasons. At the time of application, any Proposed Development parameters should not be so wide-ranging as to represent effectively different developments. The parameters should use the maximum envelope within which the built development may be undertaken to ensure a worst case assessment. The ES should identify the parameters that have been assumed as the worst case scenario for each aspect scoped in to the assessment and ensure that interactions between aspects are taken into account relevant to those scenarios.</p> <p>The development parameters should be clearly defined in the dDCO and in the accompanying ES. The Applicant, in preparing an ES, should consider whether it is possible to robustly assess a range of impacts resulting from a large number of undecided parameters. The description of the Proposed Development in the ES must not be so wide that it is insufficiently certain to comply with the requirements of Regulation 14 of the EIA Regulations. The Inspectorate draws the Applicant's attention to Advice Note 9: Rochdale Envelope, which states that "it will be for the authority</p>	<p>As outlined in Chapter 2: Assessment Methodology and other relevant ES chapters (ES Volume I, EN070009/APP/6.2), the 'Rochdale Envelope' approach has been adopted. However, optionality has already been reduced, and will continue to be reduced further as the design and the EIA progresses.</p> <p>This ES clearly defines optionality in the design at that stage and the reasoning for it, in Chapters 4 to 6 (ES Volume I, EN070009/APP/6.2) and other relevant chapters. The worst-case design parameters have been narrowed as far as reasonably possible, clearly outlined, and assessed.</p> <p>Interactions between different topics have been assessed.</p> <p>The Inspectorate's comments relating to alternatives are noted and considered elsewhere within this table.</p>

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		<p>responsible for issuing the development consent to decide whether it is satisfied, given the nature of the project in question, that it has 'full knowledge' of its likely significant effects on the environment."</p> <p>Please also note the Inspectorate's comments regarding alternatives at ID 2.1.17 of this Scoping Opinion.</p> <p>It should be noted that if the Proposed Development materially changes prior to submission of the DCO application, the Applicant may wish to consider requesting a new scoping opinion.</p>	
Chapter 4: Proposed Development	The Inspectorate	<p><u>Phasing</u></p> <p>The Scoping Report states that the Proposed Development would be phased, with a total design capacity of 1.2 gigawatt (GW) thermal for hydrogen production facility across two phases of up to 600 megawatt (MW) thermal in each phase. Table 3-2 of the Scoping Report provides an indicative construction timeline, with Phase 1 commencing mid-2025 and lasting approximately 2 years and Phase 2 commencing late 2027/ early 2028 and lasting 2-3 years. The ES should include an assessment of any likely significant effects arising from the phased nature of the Proposed Development, including risks of major accidents from the proximity of construction activity to the operational hydrogen production plant. Measures required to mitigate any significant effects should be clearly described in drafts of the construction environmental management plan (CEMP) and/ or operational environmental management plan (OEMP) submitted with the application.</p>	As outlined in Chapter 2: Assessment Methodology (ES Volume I, EN070009/APP/6.2), this ES includes an assessment of any likely significant effects arising from the phased nature of the Proposed Development, including risks of major accidents from the proximity of construction activity to the operational hydrogen production plant. Appropriate mitigation measures are clearly outlined in the Framework CEMP (ES Volume I, EN070009/APP/5.12).

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Chapter 4: Proposed Development	The Inspectorate	<p><u>Hydrogen production facility-built parameters</u></p> <p>Section 3.2 of the Scoping Report describes the above ground infrastructure that is likely to be required as part of the hydrogen production facility but does not specify any built parameters. The ES should confirm the final parameters (minimum and maximum height, width, length and depth) and location of each component of above ground infrastructure and assess any likely significant effects resulting from their construction, operation/ maintenance, or decommissioning.</p>	<p>Information regarding minimum and maximum heights, widths, lengths and depths has been included within Schedule 16 of the Draft DCO (EN070009/APP/4.1).</p>
Chapter 4: Proposed Development	The Inspectorate	<p><u>Construction working width and pipeline trenches</u></p> <p>The ES should define the applicable parameters for the construction working width and the pipeline trenches, including depth, or apply a worse case. It should be clear how these parameters are secured through the dDCO. Where significant effects are identified the ES should set out the mitigation proposed to avoid, reduce or offset such effects including where appropriate the specification of construction methods and / or limitations placed on construction activities, and how this would be secured.</p> <p>The Applicant's attention is drawn to the Environment Agency's (EA) comments in Appendix 2 regarding pipeline design [reproduced below for reference].</p> <p>"Pipeline Design</p> <ul style="list-style-type: none"> • Where the pipeline crosses a flood defence structure below ground, designs for the pipeline must include a load case for the top water level. This may be different at each location. The pipeline must also be at a suitable depth to ensure the stability of the flood defence structure, this is to be demonstrated in submitted designs; 	<p>These parameters have been outlined within the ES and the worst case has been assessed. Appropriate mitigation measures have been outlined. The design parameters have been secured by Requirement in the draft DCO (EN070009/APP/2.1).</p> <p>The EA's comments regarding pipeline design have been noted and have been considered throughout the design process.</p>

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		<ul style="list-style-type: none"> • The scoping report states the pipeline will not cross our flood defence structure above ground. If this is to change, loading to our asset will need to be considered and the design must not impede access for routine maintenance and inspections of the flood defence structure; • If the pipeline crosses a watercourse above ground, it must be appropriately designed and positioned to prevent accumulation of debris and localised increases in water levels; • Where the pipeline is to utilise existing pipework that crosses watercourses, it is expected that modifications to the structure will be made where possible for improved conveyance and reduce debris accumulation; and <p>Where ground levels near a flood defence are to be disturbed on either a permanent or temporary basis, designs must not allow additional water to pond at the toe of the flood defence."</p>	
Chapter 4: Proposed Development	The Inspectorate	<p><u>Special crossings</u></p> <p>The Scoping Report outlines that a range of crossing methodologies are under consideration for the natural gas supply and hydrogen pipeline corridors. This could include open cut and / or trenchless methodologies depending on engineering and environmental constraints. The ES should confirm the minimum and maximum depths of the crossings. The ES should clarify whether it is intended to adopt a similar approach in respect of any below ground routing for the electrical, water and other gases connections.</p> <p>Table 3-1 of the Scoping Report confirms that only trenchless techniques are being considered for crossings of the River Tees and horizontal</p>	<p>The ES outlines the proposed construction methodologies for each pipeline (including the utility connections), including the proposed minimum and maximum depths of crossings. Open cut trenching will not be used to cross flood defences. Trenchless technologies will be used instead.</p> <p>When selecting the preferred construction methodologies, the</p>

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		<p>directional drilling (HDD) or use of existing pipeline for Greatham Creek. The Inspectorate welcomes the use of trenchless techniques in environmentally sensitive areas but notes that trenchless techniques have different land requirements; the full range of environmental effects should be considered when determining a preferred construction method.</p> <p>The ES should confirm the crossing methodologies assumed for each connection corridor. If flexibility is sought regarding the use of open cut or trenchless techniques, the ES should assess the available options or identify and assess a worst case scenario as relevant to each aspect and identify relevant mitigation, and how this would be secured.</p> <p>The Applicant's attention is drawn to the EA's comments in Appendix 2 regarding construction methodologies, including those affecting existing flood defences [reproduced below for reference].</p> <p>"Pipeline Construction</p> <ul style="list-style-type: none"> • Open trench methodology is not permitted when crossing a flood defence. Excavations near the footprint of a flood defence must remain a safe distance away from the toe of the defence to ensure stability of the defence. This must be demonstrated in submitted designs; and • Directional drilling would be permitted when crossing a flood defence provided: <ul style="list-style-type: none"> – The drilling operation does not affect the stability of the flood defence structure by inducing a geotechnical failure, including when it is retaining flood water; and 	<p>potential environmental effects are being considered, along with other factors such as engineering feasibility, land acquisition and cost. More details on this are available in Chapter 6: Need, Alternatives and Design Evolution (ES Volume I, EN070009/APP/6.2).</p> <p>Where optionality in the construction methodology has been retained, an appropriate worst case has been assessed in the relevant chapters of the ES. Appropriate mitigation measures have been identified and clearly stated where required.</p> <p>The EA's comments regarding pipeline construction have been noted and considered throughout the design process.</p>

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		The drilling or permanent works do not provide a conduit for water seepage underneath the flood defence structure, including when it is retaining flood water.”	
Chapter 4: Proposed Development	The Inspectorate	<p><u>Electrical connection corridor</u></p> <p>The Scoping Report states that in addition to on-site electricity generated from the Steam Turbine Generator, an alternative supply will be required with options under consideration. Paragraph 3.6.4 of the Scoping Report states that the electrical connection could be above or below ground or a combination.</p> <p>The ES should confirm the final parameters for the selected electrical connection. If above ground, this should include the maximum number, height and locations of any pylons, and length of overhead line. The assessment of likely significant effects should take account of this infrastructure alongside the plan and other associated infrastructure.</p>	This information has been included within Section 4.6 of Chapter 4: Proposed Development (ES Volume I, EN070009/APP/6.2).
Chapter 4: Proposed Development	The Inspectorate	<p><u>Construction access</u></p> <p>The ES should identify the locations of access routes to site for construction and maintenance of the connection corridors. Any likely significant effects resulting from their construction, operation and decommissioning should be assessed.</p>	This information has been included within the ES. A plan accompanies the ES, showing the locations of construction access points. An assessment of potential likely significant effects of access to construction corridors can be found in Chapter 15: Traffic and Transport (ES Volume I, EN070009/APP/6.2).

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Chapter 4: Proposed Development	The Inspectorate	<u>Construction deliveries</u> The Scoping Report indicates that options are being explored for construction materials to be delivered by boat and/ or rail. The ES should include an assessment of the worst case allowed for in the dDCO.	In addition to road access, the Applicant has investigated opportunities to make use of existing river and rail infrastructure; in particular, the use of the existing RBT quayside is considered in the ES.
Chapter 4: Proposed Development	The Inspectorate	<u>Temporary working areas and construction compounds</u> The ES should identify the location and size of the temporary working areas for the connection corridors, as well as the temporary construction compounds. Any likely significant effects resulting from their use should be assessed.	Preliminary information regarding temporary working areas, laydown areas and construction compounds has been included within Chapter 5: Construction Programme and Management (ES Volume I, EN070009/APP/6.2). Figure 5-1: Construction Access and Laydown (ES Volume II, EN070009/APP/6.3) shows the locations of construction access points and laydown areas. An assessment of potential likely significant effects of access to construction corridors can be found in Chapter 15: Traffic and Transport (ES Volume I, EN070009/APP/6.2).
Chapter 4: Proposed Development	The Inspectorate	<u>Site clearance and remediation</u> Site A would be carried out by Teesworks under a separate consent. It is therefore not proposed to assess this within the ES. The ES should make	The proposed approach for the remediation of the Main Site (the Foundry) is outlined at Section 5.3 of Chapter 5: Construction Programme

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		<p>clear the scope and status of the consent for site remediation, as well as the timescales for the works, and a clear description of how and at what point the baseline has been defined for the purpose of assessment.</p> <p>For Main Site B these powers would be sought within the DCO application, and an assessment is proposed within the ES, should this site be selected. The ES should include an assessment of any likely significant effects arising from site clearance and remediation works, for which powers are sought within the dDCO and confirm how this is to be secured.</p> <p>The ES should include information about works required to facilitate development that is proposed outside of the DCO application, including their scope and extent, status of any relevant consents required, timescales and degree of certainty.</p>	<p>and Management (ES Volume II, EN070009/APP/6.3).</p> <p>Main Site B (RBT) is no longer under consideration and as such is not discussed further.</p> <p>An assessment of potential likely significant effects of site clearance and remediation where relevant can be found in Chapters 8 to 23 (ES Volume I, EN070009/APP/6.2).</p>
Chapter 4: Proposed Development	The Inspectorate	<p><u>Waste</u></p> <p>In order to inform a robust assessment of likely significant effects, the ES should provide information on the storage, management and disposal of waste, including tunnel arisings. Any assumptions in this regard, for example traffic movements, waste handling and contaminated land, should be clearly stated in the ES.</p>	<p>This information is set out in Chapter 5: Construction Programme and Management, Chapter 10: Geology, Hydrogeology and Contaminated Land; Chapter 15: Traffic and Transport and Chapter 21: Materials and Waste (ES Volume I, EN070009/APP/6.2).</p>
Chapter 4: Proposed Development	The Inspectorate	<p><u>Lighting</u></p> <p>In addition to operational lighting, the ES should clearly describe the location and design of lighting required along the construction working widths and at construction compounds. Any likely significant effects should be assessed.</p>	<p>The information on this topic is set out in Chapter 5: Construction Programme and Management (ES Volume I, EN070009/APP/6.2) and the FCEMP Appendix C: Indicative Lighting</p>

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			Strategy (Construction) (EN070009/APP/5.12). Potential likely significant effects are considered in Chapter 12: Ecology and Nature Conservation, Chapter 13: Ornithology, Chapter 14: Marine Ecology and Chapter 18, Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2).
Chapter 4: Proposed Development	The Inspectorate	<p><u>Decommissioning</u></p> <p>The ES assessment of impacts resulting from decommissioning should be proportionate but include a description of the process and methods of decommissioning, land use requirements and estimated timescales. A description of any assumptions made in the assessment, eg about the approach to retention or removal of pipelines, should be provided. Any decommissioning associated with dismantling and replacing elements of the Proposed Development once they reach the end of their design life should be assessed if significant effects are likely to occur. The Inspectorate notes paragraph 4.2.3 of the overarching NPS for Energy (NPS EN-1), which states that the ES should cover the environmental effects arising from decommissioning of the project.</p>	This information is set out in Chapter 5: Construction Programme and Management (ES Volume I, EN070009/APP/6.2).
Chapter 4: Proposed Development	The Inspectorate	<p><u>Alternatives</u></p> <p>The Scoping Report identifies that several alternative options are under consideration, including two sites (Main Site A and Main Site B) for the hydrogen production plant. Paragraph 4.3.7 of the Scoping Report states</p>	Design options that are still under consideration at the time of preparation of the ES are clearly outlined the worst-case assessed – see Chapter 6: Need, Alternatives and

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		that if alternatives still exist at the time of application, the ES will consider and assess the worst-case impacts. The Inspectorate's comments at ID 2.1.4 about flexibility apply equally to alternatives. For the avoidance of doubt, the ES should consider the worst-case impacts and identify mitigation as required for any options that are sought within the dDCO.	Design Evolution (EN070009/APP/6.2). Main Site B (RBT) is no longer under consideration.
Chapter 4: Proposed Development	The Inspectorate	<u>Easements</u> The description of the physical characteristics of the Proposed Development in the ES should include the details of required easements, to ensure that the extent of the likely impacts from the Proposed Development (for example, sterilisation of mineral resource) is fully understood.	This information has been included in the DCO application.
Chapter 4: Proposed Development	The Inspectorate	<u>Hydrogen pipeline safety criteria</u> The ES should explain what design guidelines and safety criteria are being followed for the hydrogen pipeline, and how any health and safety risks would be managed during operation/ maintenance. The Inspectorate notes that hydrogen is an emerging technology and that the regulatory framework and standards are likely to continue to evolve. Please also refer to the Inspectorate's comments at ID 3.13.3 of this Scoping Opinion.	This information has been included in Chapter 20: Major Accidents and Disasters (ES Volume I, EN070009/APP/6.2).
Chapter 8: Air Quality	The Inspectorate	It is agreed that operational traffic can be scoped out of the air quality assessment providing that supporting evidence of low traffic generation can be provided.	Noted. As outlined in Chapter 15: Traffic and Transportation (ES Volume I, EN070009/APP/6.2), traffic generation will be low for the operational phase.

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
Chapter 8: Air Quality	The Inspectorate	It is agreed that Non-Road Mobile Machinery emissions can be scoped out and that best practice mitigation measures will be utilised to control these emissions. It is also noted that this mitigation should be secured in the draft DCO (dDCO).	It is agreed that suitable mitigation will be secured in the dDCO, via the CEMP.
Chapter 8: Air Quality	The Inspectorate	It is not yet agreed that operational emissions of water vapour, N ₂ , O ₂ , H ₂ , CH ₄ and CO ₂ can be scoped out of the ES.	As there could be venting of CO ₂ to atmosphere during planned and unplanned operational procedures, a detailed assessment following a methodology previously accepted by the Environment Agency for other facilities with carbon capture will be included in the permit application, when the FEED Study is progressed. There are no other substances that are anticipated to be released in quantities that would potentially affect local air quality.
Chapter 8: Air Quality	The Inspectorate	It is agreed that emissions from the connection corridors can be scoped out of the ES.	Noted.
Chapter 8: Air Quality	The Inspectorate	Public and private amenity areas should be considered	Public and private amenity areas have been considered in the construction dust assessment in Appendix 8A (ES Volume III, EN070009/APP/6.4). Replacement land at Cowpen Bewley is also considered in Chapter 18:

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			Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2).
Chapter 8: Air Quality	The Inspectorate	The assessment of road traffic emissions from the construction phase should utilise Natural England guidance (NEA001).	This guidance has been considered in the ES.
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Flood Risk: The red line boundary for the full development is located within Flood Zone 3, 2 and 1. The majority of the development site for the Main Site is situated within Flood Zone 1. However, small portions of the Main Site are situated within Flood Zone 2 and 3. Parts of the Hydrogen Pipeline Corridor are also within Flood Zone 2 and 3.	Noted. Refer to Figure 9-3 (ES Volume II, EN070009/APP/6.3) for fluvial flood risk mapping. The Main Site is wholly within Flood Zone 1. Parts of the Hydrogen Pipeline Corridor are within Flood Zones 2 and 3.
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Flood Risk Vulnerability Classification: No information has been provided on the flood risk vulnerability classification within the provided information. Therefore, we are unable to advise on our policy position in relation to flood risk until the vulnerability of the development has been confirmed by the applicant and/or the local planning authority. It should be noted that 'highly vulnerable' uses, requiring a Hazardous Substance Consent, would not be appropriate within flood zones 3. In accordance with Table 2 of the flood risk and coastal change section of the Planning Practice Guidance (PPG), 'highly vulnerable' developments are not appropriate in flood zone 3 and should not be permitted.	Noted. Flood risk vulnerability is outlined in Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4). The Proposed Development comprises an approximately 1.2 GWth Carbon Capture Usage & Storage (CCUS) enabled Hydrogen Production Facility and supporting associated connections. According to NPPF (DLUHC, 2023) Annex 3 Flood Risk Vulnerability Classification, the Proposed Development is classified as 'Essential Infrastructure' and the Main Site is wholly located in Flood Zone 1.

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			<p>Essential Infrastructure is defined as 'Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood'.</p>
<p>Chapter 9: Surface Water, Flood Risk, and Water Resources</p>	<p>Environment Agency</p>	<p>Sources of Flooding: The main source of potential flooding in the area is from the tidal stretch of the River Tees, but there could be other local sources of flooding such as groundwater and surface water. We have published a suite of interactive maps that indicate where possible flooding from different sources could occur. Check the long term flood risk for an area in England - GOV.UK (www.gov.uk). Our maps are not suitable for a detailed Flood Risk Assessment (FRA), but they can indicate where further assessment may be needed.</p>	<p>Noted. These sources have been interrogated during the preparation of Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4). Further flood risk data and information has also been requested from the Environment Agency and was received in May 2023.</p>
<p>Chapter 9: Surface Water, Flood Risk, and Water Resources</p>	<p>Environment Agency</p>	<p>Flood Risk Assessment: We would expect a FRA to be submitted in support of your DCO application. The FRA must assess flood risk from all sources of flooding and recommend the mitigation measures that will be implemented to ensure a safe development in a 1 in 200-year (tidal) flood event, taking account of climate change. It must also demonstrate that flood risk will not be increased elsewhere.</p>	<p>Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4) assesses flood risk from all sources of flooding and recommends mitigation measures where required. The 1 in 200-year tidal flood event is</p>

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		<p>Flood risk mitigations will need to be included within the development to ensure it can remain safe for its' lifetime. This includes raising the finished floor levels to the 1 in 200 year plus climate change plus a freeboard of 600mm.</p>	<p>considered as requested by the Environment Agency. Further consultation has been undertaken with the Environment Agency with regard to the latest FRA and climate change allowances on 24 November 2023.</p>
<p>Chapter 9: Surface Water, Flood Risk, and Water Resources</p>	<p>Environment Agency</p>	<p>Flood Risk Information the Environment Agency (EA) holds: We have an outline for a 1 in 200-year level undefended model that can be requested. The modelling we have for this location does not include climate change allowances and therefore this will need to be calculated in accordance with the 'Flood risk assessments: climate change allowances'. As the development location is at risk from tidal flooding, sea level allowances will need to be applied to the 1 in 200-year level for the lifetime of the development using both higher central and upper end allowances. This applies to both the temporary and permanent works.</p> <p>The extent, speed and depth of flooding shown in the assessment should be used to determine the flood level for flood risk mitigation measures. Where assessment shows flood risk increases steadily and to shallow depths, it is likely to be more appropriate to choose a flood level lower in the range. Where assessment shows flood risk increases sharply due to a 'cliff edge' effect caused by, for example, sudden changes in topography or defences failing or overtopping, it is likely to be more appropriate to choose a flood level higher in the range.</p>	<p>Noted. A request for information was sent to the Environment Agency in March 2023 and a response was received in May 2023. This has been incorporated into Chapter 9 (ES Volume I, EN070009/APP/6.2) and its appendices (ES Volume III, EN070009/APP/6.4) where relevant.</p>

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Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Flood Alleviation Schemes: The Environment Agency are currently in the process of developing flood alleviation schemes which may have an interface with the proposed development. Attached to this letter is the scheme overview for the Greatham North East Flood Alleviation scheme.	Noted, and interfaces with the Greatham North East Flood Alleviation scheme have been considered during the design of the Hydrogen Pipeline Corridor for the Proposed Development.
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Flood Risk Consents and Permits: The River Tees is a designated 'main river' and under the Environmental Permitting Regulations certain works within 16m of a tidal main river, or within 16m of any flood defence structure on a tidal main river, require a Flood Risk Activity Permit from the Environment Agency. This includes works such as directional drilling under the River Tees. You can find more information on permit requirements using the following link: Flood risk activities: environmental permits - GOV.UK (www.gov.uk). If a permit is required, it must be obtained prior to beginning the works. You may also need a Marine Management Organisation (MMO) license depending on if any works will be undertaken below the mean high water springs (MHWS).	Noted. Permits and consents that are expected to be required by the Proposed Development are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2) and in the Other Consents and Licenses Statement (EN070009/APP/5.7). The need for an MMO licence is not expected given that there is no requirement for physical works within the marine environment (i.e. below Mean High Water of Spring Tides (MHWST) with trenchless approaches to be used for pipes (e.g. of the Tees Estuary and Greatham Creek).
Chapter 9: Surface Water, Flood Risk, and	Environment Agency	Water Framework Directive (WFD) Assessment: Your development proposal should have regard to the objectives the Water Environment (Water Framework Directive) Regulations 2017, and the Northumbria River Basin Management Plan, which requires the restoration and enhancement	A Water Framework Directive Assessment has been included in the Application (EN070009/APP/5.14). The approach and mitigation

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Water Resources		<p>of water bodies to prevent deterioration and promote recovery of water bodies.</p> <p>We would expect a WFD assessment to be submitted in support of your DCO application. Your WFD assessment should consider the impact of the proposed development on the WFD status of the receiving water body Tees estuary (GB510302509900) and ensure that there is no deterioration resulting from their activities. Information about the status of the water body is available at TEES Catchment Data Explorer.</p> <p>As well as water quality impacts, your WFD assessment consider impacts to fisheries, ecology, and the marine environment, both from the proposed activity once operational and during the construction phase. Any impacts identified need to be minimised and/or mitigated against. These mitigation measures should go above and beyond simply preventing deterioration and should work to create a better environment.</p>	<p>incorporated into the WFD assessment was outlined to the Environment Agency at a consultation meeting on 24 November 2023.</p>
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>Construction Environmental Management Plan: A Construction Environmental Management Plan (CEMP) should be submitted in support of your DCO application. With respect to water quality, the CEMP should address the following points:</p> <ul style="list-style-type: none"> • Treatment and removal of suspended solids from surface water run-off during construction works; • Management of fuel and chemical spills during construction and operation, including the process in place to ensure the environment is not detrimentally impacted in the event of a spill; and • Construction runoff could contain hazardous chemicals and elements due to the site's location. Contaminated land is likely to be present on 	<p>A Framework CEMP is included in Book 5 of the ES (EN070009/APP/5.12). This outlines mitigation measures based on best practice, to prevent pollution of surface water or groundwater. Further details are given in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2). A Final CEMP will be produced and implemented by the appointed Engineering, Procurement and Construction (EPC) Contractor(s)</p>

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		<p>site, and a scheme would be required to manage the associated risks, and minimise mobilisation of hydrocarbons, heavy metals, and any other hazardous pollutants into the water environment during construction and site operation.</p>	<p>post-consent. For consideration of contaminated land issues, also refer to Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2).</p>
<p>Chapter 9: Surface Water, Flood Risk, and Water Resources</p>	<p>Environment Agency</p>	<p>Drainage Strategy: In order to determine the water quality impacts, the following information should be submitted as part of your drainage strategy:</p> <ul style="list-style-type: none"> • How rainwater will be handled and discharged from the site; and • How foul water will be handled and discharged from the site. This should include if the site will be connecting to Northumbrian water's public sewer network. 	<p>Noted. Proposed drainage arrangements are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2) (and Chapter 4: Proposed Development (ES Volume I, EN070009/APP/6.2)) based on the Indicative Surface Water Drainage Plan (EN070009/APP/2.12) for the Proposed Development.</p>
<p>Chapter 9: Surface Water, Flood Risk, and Water Resources</p>	<p>Environment Agency</p>	<p>Reclaimed Water Supply: The applicant seeks to utilise reclaimed water to supply water for the proposed development. However, limited information has been provided on this matter. We recognise that reusing water will provide a substitute for either a new abstraction or increase the utilisation of existing abstractions. This will limit the environmental impact of the proposal and protect the flow regime of sources of supply. We are unable to provide further comments on the opportunities or constraints that could be associated with effluent reuse, as it is assumed that these sources of water are regulated discharges and are therefore controlled under a separate regulatory regime.</p>	<p>Further to a review of water supply options it has now been decided that be supplied via either: the existing Northumbrian Water Ltd (NWL) raw water supply to the Teesworks site; or a new connection to the existing NWL raw water supply either via tie in to NZT infrastructure or the installation of a new connection. Water re-use will be implemented within the Proposed Development, as described in Section 9.5 of Chapter 9: Surface Water, Flood</p>

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			Risk and Water Resources (ES Volume I, EN070009/APP/6.2)
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>Discharge of Trade Effluent</p> <p>Effluent discharged from any premises carrying on a trade or industry, and effluent generated by a commercial enterprise where the effluent is different to that which would arise from domestic activities in a normal home is considered to be trade effluent. If you are not able to discharge effluent, it will be classed as waste, and you must then comply with your duty of care responsibilities.</p> <p>Any effluent discharging into the Tees estuary or the adjacent coastal water body will need to be assessed as part of the DCO application. This may involve a standalone water quality assessment along with hydrodynamic modelling. Depending on the nature of the discharge, additional chemical or thermal plume modelling may be required.</p> <p>If proposing to discharge to non-mains:</p> <p>If you wish to discharge effluent, after appropriately treating it, to groundwater or surface water a permit under the Environmental Permit Regulations will be required. Full characterisation of the effluent will be required, and modelling may be required at the planning stage to determine the impact of the effluent on the receiving watercourse.</p> <p>A trade effluent consent or a trade effluent agreement with your water and sewerage company (in this case likely to be Northumbrian Water) must be obtained before you discharge trade effluent to a public foul sewer or a private sewer that connects to a public foul sewer.</p>	<p>Quantitative hydrodynamic dispersion modelling of the effluent discharge to Tees Bay (for Case 2B) has been undertaken and is reported within this chapter and Appendix 9B: Water Quality Modelling Report (ES Volume III, EN070009/APP/6.4). The Environment Agency and Natural England were consulted to confirm the modelling scope at meetings held on 24 November 2023 and 14 November 2023, respectively.</p> <p>The Applicant has also begun engagement with the Environment Agency under the enhanced pre-application scheme and is finalising an application for an Environmental Permit anticipated to be submitted in 2024.</p>

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Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Discharge of Clean Water: Clean surface water (i.e., clean, uncontaminated rainwater from hard standing areas such as roads and car parks) can be discharged to a watercourse without a permit if the discharge passes through a maintained oil interceptor or Sustainable Urban Drainage System. If a water attenuation system is proposed it would be beneficial to see the details, methods, and maintenance of the system to ensure longevity and effectiveness.	Noted. Drainage principles for the Proposed Development are outlined in Section 9.5 of this chapter (and Chapter 4: Proposed Development (ES Volume I, EN070009/APP/6.2)). The suitability of the drainage arrangements is assessed in Section 9.6 of Chapter 9 (ES Volume I, EN070009/APP/6.2).
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Construction Dewatering (Discharge): Discharge from temporary excavations can occur if the discharge can meet all of the conditions of the Regulator Position Statement "Temporary dewatering from excavations to surface water". This is available at https://www.gov.uk/government/publications/temporary-dewatering-from-excavations-to-surface-water/temporary-dewatering-from-excavations-to-surface-water). If any discharge cannot meet all the conditions, a Bespoke Environmental Permit would be required, this would follow the same timeline as other water quality permits stated under the discharge of trade effluent section of this response.	Noted. Permits, licences and consents that are expected to be required by the Proposed Development are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2).
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Water Resources (Abstraction and Impoundment): The proposals may require Water Resource Licences in respect of the construction activities required and the eventual operation of the site. Water Resource (Impoundment and Abstraction) Licences are issued by the Environment Agency under the terms of the Water Resources Act 1991, and the provisions of the Water Resources (Abstraction and Impounding) Regulations 2006. The current estimated time to receive a water resources	Noted. Permits, licences and consents that are expected to be required by the Proposed Development are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2) and

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		licence permit is between 6 and 9 months. Therefore, applications should be made at the earliest opportunity.	the Other Consents and Licenses Statement (EN070009/APP/5.7).
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Impounding licence: If you intend to impound a watercourse then you are likely to need an impounding licence from the Environment Agency. An impoundment is any dam, weir or other structure that can raise the water level of a water body above its natural level. 'On-line' impoundments hold back water in rivers, stream, wetlands and estuaries, and consequently affect downstream flows, sediment transport and migration of fish. Impoundments could be created through works to modify or change existing watercourses. An Impoundment Licence could also be required if you amend, modify or remove existing in channel structures.	Noted. Permits, licences and consents that are expected to be required by the Proposed Development are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2) and the Other Consents and Licenses Statement (EN070009/APP/5.7).
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Construction Dewatering (Abstraction): Dewatering is the removal/abstraction of water (predominantly, but not confined to, groundwater) in order to locally lower water levels near the excavation. This can allow operations to take place, such as mining, quarrying, building, engineering works or other operations, whether underground or on the surface. The dewatering activities on-site could have an impact upon local wells, water supplies and/or nearby watercourses and environmental interests. This activity was previously exempt from requiring an abstraction licence. Since 1 January 2018, most cases of new planned dewatering operations above 20 cubic metres a day will require a water abstraction licence from us prior to the commencement of dewatering activities at the site.	Noted. Permits, licences and consents that are expected to be required by the Proposed Development are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2) and the Other Consents and Licenses Statement (EN070009/APP/5.7).
Chapter 9: Surface Water,	Environment Agency	Nutrient Neutrality: Nutrient Neutrality applies to developments and discharges in this area. Please ensure liaison with Natural England is	Noted. A Nutrient Neutrality Assessment is included in the

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Flood Risk, and Water Resources		undertaken as this issue may have implications on your WFD assessment and technical assessments.	Application (EN070009/APP/5.13). Consultation has been undertaken with Natural England as the Proposed Development has progressed to ensure that nutrient neutrality is suitably addressed (through meetings on 12 June 2023 and 14 November 2023).
Chapter 9: Surface Water, Flood Risk, and Water Resources	The Inspectorate	Flood Zones. The Scoping Report identifies Flood Zones across the Study Area however does not include sub-categories, such as an area of high probability (Flood Zone 3a) or functional floodplain (Flood Zone 3b). The ES should provide an accurate and consistent description of the baseline flood risk for each element of the Proposed Development and the description should clearly distinguish between Flood Zones, including Flood Zones 3a and 3b where relevant. The Applicant's attention is drawn to the EA's comments in Appendix 2 regarding Flood Zones; the Inspectorate notes that there is a discrepancy between information in the Scoping Report, which identifies that Main Site B is entirely within Flood Zone 1, and the EA's information, which states it is primarily within Flood Zone 1 but partially within Flood Zones 2 and 3. The Flood Zone should be confirmed within the ES and mitigation identified as required.	Noted. Refer to Figure 9-3 (ES Volume II, EN070009/APP/6.3) for fluvial flood risk mapping. A further description is provided in Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4) and summarised in Chapter 9 (ES Volume I, EN070009/APP/6.2).
Chapter 9: Surface Water, Flood Risk, and Water Resources	The Inspectorate	Pollution of surface water courses during operation. The Scoping Report scopes in assessment for this matter during construction and decommissioning. Consideration of the potential for accidental spillages during operation is proposed to be assessed as part of Geology, Hydrogeology and Contaminated Land (paragraph 6.4.88 of the Scoping	Assessment of pollution to surface watercourses is addressed in Chapter 9 (ES Volume I, EN070009/APP/6.2). Refer to Section 9.5: Development Design and Impact Avoidance, and

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		Report). Cross-reference should be made to the outcome of that assessment in the Surface Water Resources chapter of the ES.	Section 9.6: Likely Impacts and Effects, for the assessment. Cross-references are made to other chapters where appropriate.
Chapter 9: Surface Water, Flood Risk, and Water Resources	The Inspectorate	Additional assessments. The Inspectorate notes that a Flood Risk Assessment (FRA), Water Framework Directive (WFD) assessment and nutrient neutrality assessment will be prepared. Information from these assessments should be used to inform preparation of the ES. The Scoping Report describes surface water bodies and groundwater bodies designated under the WFD, which are located close to the Proposed Development. The ES should include an assessment of the likely significant effects to both types of WFD water body. The Applicant's attention is drawn to the EA's comments in regarding scope of the WFD and nutrient neutrality assessments.	Noted. The water environment assessment is presented in Chapter 9 (ES Volume I, EN070009/APP/6.2) taking into account Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4), Nutrient Neutrality Assessment (EN070009/APP/5.13), Water Framework Directive Assessment (EN070009/APP/5.14) and Appendix 9B: Water Quality Monitoring Report (ES Volume III, EN070009/APP/6.4).
Chapter 9: Surface Water, Flood Risk, and Water Resources	The Inspectorate	Scope of assessment – FRA. The FRA underpinning the ES assessment should additionally cover matters including the effect that temporary mounds of soil in the floodplain could have on flood risk, the volumes of water displacement involved and mitigation measures where necessary. The Applicant's attention is drawn to the EA's comments in Appendix 2 regarding scope of the FRA and climate change allowances.	Noted. Refer to Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4).
Chapter 9: Surface Water, Flood Risk, and	The Inspectorate	Impacts from frac-out. The ES should include an assessment of likely significant effects arising from frac-out i.e. fracking fluid breakout during HDD works, on aquatic environment receptors and water resource	Noted. Impacts from potential frac-out events associated with drilling fluid surface breakout (no hydraulic

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Water Resources		receptors, including consideration of any impacts arising from clean-up works.	fracturing (“fracking”) is proposed) have been considered. Refer to Chapter 9 (ES Volume I, EN070009/APP/6.2) Section 9.5: Development Design and Impact Avoidance, and Section 9.6: Likely Impacts and Effects, for the assessment.
Chapter 9: Surface Water, Flood Risk, and Water Resources	The Inspectorate	Scope of assessment. The ES should assess the potential for an increase in offsite flood risk arising from any proposed ground raising within the development boundary, including the pipeline corridors. Effort should be made to agree the scope of the assessment, including the requirement for flood modelling, with the EA. The ES should identify any mitigation required to address likely significant effects.	Noted, refer to Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4). Flood risk effects (including offsite flood risk) are also summarised in Chapter 9 (ES Volume I, EN070009/APP/6.2). Further consultation was undertaken with the Environment Agency with regard to the latest FRA and climate change allowances on 24 November 2023.
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Offsite Flood Risk. If ground raising is occurring within part of the development boundary, and the existing ground levels are below the design flood event, then an assessment will be required to confirm no increase in offsite flood risk. Given current topographical levels of the Main Site and if ground raising is significant which is below the design flood event, then flood modelling should be undertaken. If the pipeline is causing any ground raising or is above ground which could impact local flood mechanisms, an assessment will be required to understand any	Noted – refer to Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4). Flood risk effects (including offsite flood risk) are summarised in Chapter 9 (ES Volume I, EN070009/APP/6.2). Further consultation was undertaken with the Environment Agency with

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		increase in offsite flood risk and provide mitigation measures, this assessment could include modelling.	regard to the latest FRA and climate change allowances on 24 November 2023.
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>Hydrogen Pipeline Corridor. The proposed hydrogen pipeline corridor heading north towards the Venator Plant, could affect our flood defence assets along Greatham Creek and the EA's land holding at Marsh House Farm. In addition, all three routes (labelled R1, R2 and R3 on a document previously supplied to the EA ('All Utility Connection Corridor, Figure 1') could have a significant impact on Greatham Creek and its associated saltmarsh habitat – the last remaining natural area of the original Tees Estuary. In particular, R2 and R3 in particular are of significant concern to the EA.</p> <p>R2 runs along the line of one of our major flood defences at Cowpen Marsh. The defence lies between the Cowpen Bewley Landfill (to the West) and the Teesmouth and Cleveland Coast Special Protection Area (SPA) (to the East). As such, any work along this corridor could impact one the three current land uses. To the north of Greatham Creek, R2 then runs through Saltern Wetlands (an area of saltmarsh owned by the EA) and under the EA's flood embankment to the south of the ConocoPhillips tank farm. The EA has concerns that this route will have an impact on the wetland area, which lies within the SPA, and flood defences.</p> <p>R1 crosses the no. 4 brinefield (owned by Sabic and used for hydrocarbon storage), and under the flood embankment on the south bank of Greatham Creek (Sabic Embankment). It also lies under the flood embankment on the north bank of Greatham Creek, which is to be significantly repaired as part of EA's Greatham North East Flood Alleviation</p>	<p>Noted, interfaces with the Greatham Creek flood alleviation scheme have been taken into account during determining the route of the Hydrogen Pipeline Corridor. Impacts on flood defences are considered in Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4).</p> <p>Potential impacts and effects to habitats are considered in Chapter 12: Ecology and Nature Conservation (including Aquatic Ecology) (ES Volume I, EN070009/APP/6.2).</p> <p>Impacts on surface water bodies and groundwater bodies related to the pipelines are considered in Chapter 9 (ES Volume I, EN070009/APP/6.2).</p>

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		<p>Scheme (FAS). This route also crosses the redundant no. 5 brinefield (owned by Inovyn Chlorvinyl Ltd) and the ConocoPhillips oil pipeline corridor and Seal Sands Emergency Access Road.</p> <p>R3 crosses our land at Marsh House Farm to be used for the extraction of clay in 2024-2026 for our Greatham NE FAS. The EA is also developing a scheme (Greatham North East FAS) to improve the defences to the south of the Venator Plant. We expect to submit an application for planning permission in Spring 2024 and hope to start construction of the scheme in summer 2024. We are currently seeking contributions from beneficiaries of the scheme. As the proposed pipeline could benefit from our works, we would welcome discussions with the applicant on the potential for financial contributions from DCO, if R1 is chosen as the preferred route.</p>	
<p>Chapter 9: Surface Water, Flood Risk, and Water Resources</p>	<p>Environment Agency</p>	<p>Pipelines. The EA would require the existing flood standard of protection, provided by the defences to be maintained both during the construction of the pipeline, and after completion of the scheme, whichever route is chosen. In order to minimise the impact of the DCO on our flood defences, consideration should be given to the following comments:</p> <p>Pipeline Design</p> <ul style="list-style-type: none"> • Where the pipeline crosses a flood defence structure below ground, designs for the pipeline must include a load case for the top water level. This may be different at each location. The pipeline must also be at a suitable depth to ensure the stability of the flood defence structure, this is to be demonstrated in submitted designs; • The scoping report states the pipeline will not cross our flood defence structure above ground. If this is to change, loading to our asset will need 	<p>Noted. These considerations have been taken into account during Proposed Development design development to date and will also be considered at the detailed design phase. Worst-case assumptions have been considered in the assessment in Chapter 9 (ES Volume 1, EN070009/APP/6.2). Where this is the case the nature of the assumptions have been clearly explained.</p>

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		<p>to be considered and the design must not impede access for routine maintenance and inspections of the flood defence structure;</p> <ul style="list-style-type: none"> • If the pipeline crosses a watercourse above ground, it must be appropriately designed and positioned to prevent accumulation of debris and localised increases in water levels; • Where the pipeline is to utilise existing pipework that crosses watercourses, it is expected that modifications to the structure will be made where possible for improved conveyance and reduce debris accumulation; and • Where ground levels near a flood defence are to be disturbed on either a permanent or temporary basis, designs must not allow additional water to pond at the toe of the flood defence. 	
<p>Chapter 9: Surface Water, Flood Risk, and Water Resources</p>	<p>Environment Agency</p>	<p>Pipeline Construction.</p> <ul style="list-style-type: none"> • Open trench methodology is not permitted when crossing a flood defence. Excavations near the footprint of a flood defence must remain a safe distance away from the toe of the defence to ensure stability of the defence. This must be demonstrated in submitted designs; and • Directional drilling would be permitted when crossing a flood defence provided: <ul style="list-style-type: none"> - The drilling operation does not affect the stability of the flood defence structure by inducing a geotechnical failure, including when it is retaining flood water; and <p>The drilling or permanent works do not provide a conduit for water seepage underneath the flood defence structure, including when it is retaining flood water.</p>	<p>Noted. Directional drilling is proposed beneath flood defences, where present. Further details regarding pipelines and crossings are given in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2).</p>

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Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>Pipeline Maintenance.</p> <ul style="list-style-type: none"> Repairs or future improvement works will be subject to an Environmental Permit from the EA if taking place within 16 m of a flood defence; and <p>Routine maintenance activities on the pipeline should be detailed within the DCO application.</p>	<p>Noted. Permits and consents that are expected to be required by the Proposed Development are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2) and the Other Consents and Licenses Statement (EN070009/APP/5.7).</p> <p>Pipelines will be subject to an Integrity Management Plan that will include, but not limited to, Inline Inspection, Cathodic Protection surveys, visual inspections, and maintenance of associated equipment at frequencies informed by Risk Based Inspections.</p>
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>Flood Defence Maintenance. In order to maintain the standard of protection, the EA requires continued access to continue routine maintenance of the existing and planned defences. Any permissions or legal agreements to allow these works to go ahead, must be agreed in advance of pipeline construction. It should be noted that the EA have statutory powers to carry out works on our assets.</p>	<p>Noted. Environment Agency access will be maintained as necessary.</p>
Chapter 9: Surface Water, Flood Risk, and	Environment Agency	<p>Drinking Water Protected Areas. The scoping report states there are no drinking water protected areas within 1 km (or in Section 6.3.8, 15km) of the proposed development area. In terms of groundwater, all groundwater bodies in England are designated as drinking water protected areas. As</p>	<p>Noted. Clarified within Chapter 9 (ES Volume I, EN070009/APP/6.2) that this refers to drinking protected areas for surface water.</p>

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Water Resources		such, the development area sits upon a groundwater drinking protected area.	
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Drainage. In terms of SUDs, we would recommend that there is no increase in infiltration within the development area. This is to avoid the risk of contaminant mobilisation given the industrial heritage of the area. This ties into section 6.4.88 where the scope of assessment includes 'disturbance of contaminated soils and perched groundwater, and the creation of new pathways to sensitive receptors (including construction workers and controlled waters) during construction.	Surface water drainage is proposed to be discharged either to the NZT outfall discharging into Tees Bay or alternatively to a new outfall via the STDC drainage system into the Estuary.. Drainage principles for the Proposed Development are outlined in Section 9.5 of Chapter 9 (ES Volume I, EN070009/APP/6.2).
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>The Water Environment (Water Framework Directive) (WFD) Regulations. The applicant should provide an assessment of the impact of the proposal on water quality in respect to the following waterbodies:</p> <ul style="list-style-type: none"> • Tees (GB510302509900) • Tees Coastal (GB650301500005) • Tees Estuary (South Bank) GB103025072320) <p>The WFD assessment will need to have regard to the Water Environment Regulations (WER) / WFD, and the Northumbria River Basin Management Plan (NRBMP).</p> <p>The applicant should ensure that:</p> <ul style="list-style-type: none"> • The pipeline corridors do not add to the physical modification of the water environment unless equivalent appropriate mitigation measures are put in place; and 	Water Framework Directive Assessment (EN070009/APP/5.14) includes assessment of the Tees, Tees Coastal and Tees Estuary (South Bank) water bodies, as well as consideration of potential for impacts relating to pipeline corridors.

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		<ul style="list-style-type: none"> • Pipeline corridor routes and excavations should as far as practicably minimise or avoid the crossing of watercourses, and not run proximate and parallel to watercourses. In particular, pipeline corridors should not be situated so as to jeopardise the potential for restoration of intertidal and riverine habitats that support the recovery of the Teesmouth and Cleveland Coast SPA. Preferably pipeline corridors should follow existing physical modifications such as road infrastructure or existing pipeline corridors. 	
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>Nutrient Neutrality. For clarification of the statement at 6.3.9, the Teesmouth and Cleveland Coast SPA is within the Tees catchment where future development must be nutrient neutral to ensure no deterioration in WER (WFD) Dissolved Inorganic Nitrogen (DIN) element status. Reductions below the current baseline are required to achieve the protected area objectives.</p> <p>Similarly, the undertaking at 6.3.36 to carry out a Nutrient Neutrality Screening Assessment to assess likely impact on achievement of the targets for the WFD DIN element is acknowledged and supported. This should include the potential impact from emissions to air.</p>	<p>Noted. Water Framework Directive Assessment (EN070009/APP/5.14) considers the potential for the Proposed Development to lead to deterioration, or prevention of future improvement, in the WFD DIN element status. It is noted that DIN reductions below the current baseline are required for protected area objectives to be achieved.</p> <p>Nutrient Neutrality Assessment (EN070009/APP/5.13) has determined whether the Proposed Development can be considered nutrient neutral i.e. there would no increase in nutrient load (in this case nitrogen) to the designated habitats site as a result of the Proposed Development. The aim</p>

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			<p>of the nutrient neutrality requirements is to reduce the effect of eutrophication (due to excess nitrogen) on the Teesmouth and Cleveland Coast SPA. The assessment takes into account emissions to air. Consultation has been undertaken with Natural England as the Proposed Development has progressed to ensure that nutrient neutrality is suitably assessed (through meetings on 12 June 2023 and 14 November 2023). Similarly, consultation has been undertaken with the Environment Agency on 13 June 2023 and 24 November 2023 to ensure that WFD compliance is suitably assessed.</p>
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Baseline conditions. The Scoping Report identifies in section 2.2 that large areas of the proposed development site was historically intertidal habitat within the Tees estuary. The progressive infilling of the estuary, port development and subsequent flood protection modifications have contributed to the Tees estuary waterbody being designated as a Heavily Modified Waterbody (HMWB) under WFD. In order to achieve the overarching WFD objective of Good Ecological Potential (GEP) in HMWBs, mitigation measures must be taken to address the ongoing ecological impacts of such modifications and prevent deterioration on this baseline. A	A freedom of information request has been sent to the Environment Agency to obtain additional information regarding WFD mitigation measures. A response was received in May 2023. Further details are provided in Section 9.5 and within Water Framework Directive Assessment (EN070009/APP/5.14).

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		Mitigation Measures Assessment has been undertaken and various information on appropriate mitigation measures is available. However, the limitations of the Catchment Data Explorer portal are such that this information cannot currently be provided through that platform.	
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Future baseline. The Tees estuary is undergoing a period of ecological recovery after decades of industrial and sewage pollution. The future ecological baseline conditions are likely to be an improvement on the current conditions because of interventions already completed. Future baseline conditions will also be influenced by imminent legislation (Levelling Up Bill) and regulatory requirements (Water Company Price Review) that are likely to require significant reductions in the level of nutrients within the Tees estuary and within the timeframe of the proposed development. The area is also already subject to nutrient neutrality advice that aims to ensure no deterioration of current environmental conditions. The WFD assessment should therefore take account of such future baseline conditions.	The assessment presented in this chapter takes account of the future baseline (see Section 9.4). Water Framework Directive Assessment (EN070009/APP/5.14) also considers these future baseline conditions. However, please note that the importance of the Tees Estuary and Tees Bay are both categorised as 'very high', the highest category possible in Chapter 9 (ES Volume I, EN070009/APP/6.2).
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	Foul drainage. We would expect to see the following points to be addressed within the DCO application: <ul style="list-style-type: none"> • Confirmation of which sewage treatment works will receive the foul flows. • Confirmation that there is sufficient capacity in the receiving Northumbrian Water network to accept the flows without increasing storm overflow spills. 	This information is provided in Chapter 4 and Chapter 9 (ES Volume I, EN070009/APP/6.2). Water Framework Directive Assessment (EN070009/APP/5.14) takes into account foul drainage.

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		<ul style="list-style-type: none"> • Confirmation that there is sufficient capacity at the receiving sewage treatment works (STW) to accept the flows while still operating within the permitted flow and quality limits. • The applicant will need to produce their own WFD assessment to demonstrate the impact of the proposed development on the receiving watercourse. • If there is insufficient capacity within the network or at the STW, details of an appropriate phasing approach for the development to enable the necessary upgrades to the sewage network before connecting the development should be provided. 	
Chapter 9: Surface Water, Flood Risk, and Water Resources	Environment Agency	<p>EA and Partner Projects. The EA and partners are bringing forward a programme of projects designed to mitigate the ongoing ecological impact of historical physical modifications on the Tees estuary and tributaries. The current Programme is scheduled to be completed by the commissioning date of the proposed development. The DCO should not jeopardise attainment of these WFD mitigation measures. Therefore, the developer may wish to support these projects so as to demonstrate appropriate mitigation of any impacts, or to secure betterment of the local environment:</p> <ul style="list-style-type: none"> • The Tees Tidelands Programme is led by the EA and Stockton-on-Tees Borough Council, and consists of a number of projects that aim to restore intertidal habitats and ecologically reconnect the Tees estuary to tributaries. • The EA Seal Sands SSSI restoration project is initially focusing on building a Tees estuary baseline hydraulic model, but in the future also seeks to 	<p>Noted. These projects are incorporated into the baseline / future baseline presented in Chapter 9 (ES Volume I, EN070009/APP/6.2) and any potential impacts on these considered where necessary in the assessment.</p> <p>The Applicant is also engaging with the Environment Agency, Natural England and the Teesside River Trust.</p>

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		<p>identify the prioritised physical interventions to manage excess growth of macroalgae.</p> <ul style="list-style-type: none"> • The Tees Rivers Trust (TRT) are undertaking a Tees Estuary Edges project to install a suite of bio-engineered designs that enhance ecology in the highly modified Tees navigation channel. • TRT are also undertaking species (oyster, seagrass, mussel) reintroduction projects at locations within Tees Bay and the estuary. • The Canal and River Trust (CRT) are developing designs to secure enhanced fish passage across the Tees Barrage and so throughout the Tees catchment. 	
Chapter 9: Surface Water, Flood Risk, and Water Resources	Natural England	<p>Nutrient Neutrality. Natural England's Nutrient Neutrality advice is that new developments should not result in additional nitrogen entering the catchment of the River Tees upstream of the Teesmouth & Cleveland Coast SPA and Ramsar site (i.e. they are nutrient neutral).</p> <p>This advice applies primarily to development involving overnight accommodation i.e. it focuses on additional volumes of treated wastewater arising as a result of new house building.</p> <p>However in order to restore the SPA to favourable condition the wider effects of nutrient inputs into the Tees hydrological catchment are also relevant.</p> <p>As a result we note and welcome the applicant's recognition of the nutrient pollution theme (paragraphs 6.3.35-37). The Habitats Regulations Assessment (HRA) process provides the means to assess the proposal and we acknowledge paragraphs 6.6.27-31 accordingly. Natural England looks</p>	Noted. A Nutrient Neutrality Assessment is included in the Application (EN070009/APP/5.13). Consultation has been undertaken with Natural England as the Proposed Development has progressed to ensure that nutrient neutrality is suitably assessed (through meetings on 12 June 2023 and 14 November 2023).

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		forward to continued dialogue with the applicant to progress this element of the proposal.	
Water Framework Directive	Environment Agency	<p>The Water Environment (Water Framework Directive) (WFD) Regulations. The applicant should provide an assessment of the impact of the proposal on water quality in respect to the following water bodies:</p> <ul style="list-style-type: none"> • Tees (GB510302509900) • Tees Coastal (GB650301500005) • Tees Estuary (South Bank) GB103025072320) <p>The WFD assessment will need to have regard to the Water Environment Regulations (WER) / WFD, and the Northumbria River Basin Management Plan (NRBMP).</p> <p>The applicant should ensure that:</p> <ul style="list-style-type: none"> • The pipeline corridors do not add to the physical modification of the water environment unless equivalent appropriate mitigation measures are put in place; and • Pipeline corridor routes and excavations should as far as practicably minimise or avoid the crossing of watercourses, and not run proximate and parallel to watercourses. In particular, pipeline corridors should not be situated so as to jeopardise the potential for restoration of intertidal and riverine habitats that support the recovery of the Teesmouth and Cleveland Coast SPA. Preferably pipeline corridors should follow existing physical modifications such as road infrastructure or existing pipeline corridors. 	A WFD Assessment has been produced (EN070009/APP/5.14). This includes assessment of the Tees, Tees Coastal and Tees Estuary (South Bank) water bodies, as well as consideration of potential for impacts relating to pipeline corridors.

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Chapter 10: Geology, Hydrogeology and Contaminated Land	The Inspectorate	Potential Effects: In addition to the impact pathways described at paragraph 6.4.88 of the Scoping Report, the ES should include an assessment of effects arising from changes to groundwater flow, levels and quality during construction, operation and decommissioning, including from the presence of below ground pipelines, where likely significant effects could occur. The Inspectorate notes that paragraph 6.3.20 of the Scoping Report states that potential impacts to groundwater flow would be assessed as part of this aspect.	Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2) includes an assessment of effects arising from changes in groundwater flow, levels and quality during construction, operation and decommissioning including from presence of below ground pipelines.
Chapter 10: Geology, Hydrogeology and Contaminated Land	The Inspectorate	Drainage Strategy: The Scoping Report refers to implementation and maintenance of operational drainage systems to control potential impacts from pollution to surface watercourses. The Applicant should provide a draft/outline version of the drainage strategy and demonstrate how this will be secured through the DCO or other legal mechanism. Potential construction phase impacts should also be addressed in a drainage strategy.	An outline drainage philosophy has been submitted with the ES, and referenced in Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2). This information is provided in Chapter 4 and Chapter 9 (ES Volume I, EN070009/APP/6.2). Water Framework Directive Assessment (EN070009/APP/5.14) takes into account foul drainage. The drainage strategy and detailed drainage design has been secured by a Requirement in the DCO.
Chapter 10: Geology, Hydrogeology	The Inspectorate	Baseline Information: The desk-based assessments and conceptual site model should be submitted as part of the ES. In addition to Main Sites A and B, these documents should provide information about land within the	A desk-based assessment for the Proposed Development Site is included in the Application (Appendix

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and Contaminated Land		connection corridors. The baseline information should be sufficient to enable an assessment of the likely significant effects arising from the construction and operation of the Proposed Development, including consideration of the range of construction methods proposed or on the basis of any assumed construction methods where they are not known at time of ES preparation. This should include ground investigation if deemed necessary to sufficiently understand the baseline environment.	10A, ES Volume III, EN070009/APP/6.4), and a CSM has been prepared (Appendix 10B, ES Volume III, EN070009/APP/6.4). Details of these have been included in the ES.
Chapter 10: Geology, Hydrogeology and Contaminated Land	The Inspectorate	Intrusive Investigation: The ES should include a full description of any further intrusive investigation required and confirm how this is to be secured. Effort should be made to agree the scope with all relevant consultation bodies e.g. Hartlepool Council and Stockton-on-Tees Council where it relates to land within their administrative area.	Details of the intrusive investigations have been included within Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2).
Chapter 10: Geology, Hydrogeology and Contaminated Land	The Inspectorate	Drinking Water Protected Areas: The Applicant's attention is drawn to the EA's comments in Appendix 2 regarding groundwater bodies being designated as drinking water protected areas. The status of the groundwater bodies should be reflected in the baseline description and assessment of potential impacts in the ES.	Drinking water protected areas and assessment have been included within Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2).
Chapter 10: Geology, Hydrogeology and	Redcar and Cleveland Borough Council	Environmental Protection (Contamination): The Consultee notes that the scoping opinion report recommends that geology, hydrogeology and contaminated land topic is scoped into the future impact assessment. In order to minimise the environmental impact I would recommend that the	The principles of the council's full standard contaminated land condition have been considered within Chapter 10: Geology, Hydrogeology and

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Contaminated Land		principles of the councils full standard contaminated land condition are followed in any future environmental impact assessment.	Contaminated Land (ES Volume I, EN070009/APP/6.2).
Chapter 10: Geology, Hydrogeology and Contaminated Land	Redcar and Cleveland Borough Council	Local Lead Flood Authority (LLFA): The Consultee recommends that applications are based on the guidance within the Tees Valley Design Guide and the principal of LLFA conditions 1, 2 and 3. The guidance for the design of the drainage scheme includes a discharge point for the disposal of surface water (LLFA 1).	An indicative Surface water drainage plan is provided with the Application in Figure 2-1 (EN070009/APP/2.12). Drainage principles and indicative arrangements are described in Chapter 4: Proposed Development and Chapter 9: Surface Water, Flood Risk and Water Resources, these are considered the assessment within Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2). The final Drainage Strategy and detailed Drainage Design has been secured by a Requirement in the DCO.
Chapter 10: Geology, Hydrogeology and Contaminated Land	Redcar and Cleveland Borough Council	Natural England: The Consultee notes that Natural England must be consulted on Environmental Statements. The Environmental Statement should include a description of the development, an assessment of alternatives and reasoning as to why the option has been chosen, a description of the aspects of the environment likely to be affected by the development, a description of the likely significant effects on the environment, a description of the measures envisaged to prevent, reduce and offset adverse effects on the environment, a non-technical summary	Natural England has been consulted through statutory consultation via the PEI Report. The ES has been prepared in accordance with the responses received as part of the statutory consultation.

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		of the information and an indication of the difficulties encountered by the applicant in compiling information.	
Chapter 11: Noise and Vibration	RCBC	The identified monitoring locations for RCBC cover the main noise sensitive communities and the scope of the surveys is considered sufficient.	Noted.
Chapter 11: Noise and Vibration	STBC	<p>The only residential area likely to be affected is Cowpen Bewley Village (represented by monitoring location H1.) Please notify if any other residential areas with STBC area likely to be affected by the Proposed Development. Recommend long term unattended measurement of 7 days instead of short term attended.</p> <p>Noise from the operation of the Proposed Development should not exceed the existing background levels by more than 5dB during the day (07:00hrs-23:00hrs) and there to be no exceedance of the existing background levels at night (23:00hrs- 07:00hrs). There should also be no increase on the existing ambient baseline sound levels at the nearest sensitive receptors as an $L_{Aeq,T}$ during the day and night.</p> <p>Should this work involve significant construction work then a noise impact assessment in accordance with BS5228 is required.</p>	<p>The results of the baseline survey have been reported in Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2). Long term unattended measurement was undertaken for a period of 8 days.</p> <p>A preliminary operational noise assessment is provided in Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2). This does not include NSR H1 as an assessment location due to the significant distance to operational noise sources (7.3 Km) however this criteria is met at receptors closer to the development.</p> <p>A preliminary construction phase noise assessment in accordance with BS5228 is provided in Chapter 11:</p>

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			Noise and Vibration (ES Volume I, EN070009/APP/6.2).
Chapter 11: Noise and Vibration	HBC	No response received to initial email, follow up email issued informing that the baseline sound surveys have been completed and stated if no response is received it is assumed that they have no objection to the sound monitoring locations.	Telephone discussion with Environmental Health Officer (EHO) on 10 August 2023 regarding the potential for baseline surveys in Greatham and Seaton Carew. As baseline surveys have already been undertaken, it was agreed to undertake assessment of construction and operational impacts at these locations. An initial assessment has indicated that significant adverse effects are not likely due to the distance to the receptors in Greatham and Seaton Carew. As stated in in Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2). it is considered that if noise and vibration levels are suitably controlled at the nearest and most exposed receptors identified, then noise and vibration levels will be suitably controlled at other sensitive receptors in the wider surrounding area.

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Chapter 11: Noise and Vibration	The Inspectorate	Operational road traffic noise. The scoping report seeks to scope out effects from operational road traffic noise. The Inspector states that the ES should provide further information on the predicted number of movements required for consumables during operation to demonstrate that these will remain under the thresholds.	The generation of traffic during Proposed Development operation will be minimal when compared to the construction phase (as described in Chapter 15: Traffic and Transport (ES Volume I, EN070009/APP/6.2)). Therefore, residual traffic effects during operation are also considered to be Negligible (Not Significant).
Chapter 11: Noise and Vibration	The Inspectorate	The Scoping Report states that significant vibration impacts during operation are not likely due to the distance between the Proposed Development and receptors, but operational activities will be briefly considered in the ES. The ES should describe the activities likely to give rise to vibration effects.	Such information has been provided in Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2).
Chapter 12: Ecology	The Inspectorate	Great Crested Newt (GCN) Surveys. The Scoping Report seeks to scope out surveys on land located to the south of the River Tees on the basis that the Industry Nature Conservation Association (INCA) (a membership organisation including the Tees Valley Wildlife Trust) confirmed for the NZT project that there are known occurrences of GCN in this area. Table 6-3 of the Scoping Report states that land to the north of the River Tees would be surveyed if a District Level Licensing (DLL) approach is not agreed with Natural England. The Inspectorate agrees that surveys on land to the south of the River Tees can be scoped out of the ES.	Habitat Suitability Assessments and eDNA surveys have been completed to confirm GCN presence/likely absence within suitable waterbodies up to 500 m from the Hydrogen Production Facility and 250 m from the connection corridors (refer to Appendix 12-B: GCN Survey Report (ES Volume III, EN070009/APP/6.4)).

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			GCN were confirmed present at three locations north of the River Tees. A district level licence will be used to avoid significant effects upon GCN. We will continue to work with NE to obtain the IACPC.
Chapter 12: Ecology	The Inspectorate	Effects on relevant habitats and species from water quality changes during operation. The Scoping Report states that temporary effects to water quality during construction would be considered but does not reference potential effects during operation, for example from spillages or discharges, extraction of water and/or effluent discharge. The ES should include an assessment of this matter or otherwise demonstrate why significant effects are not likely to occur. Cross-reference should be made to the assessment in the Surface Water, Flood Risk and Water Resources ES Chapter.	Effects upon relevant habitats and species from water quality changes are considered for all phases of the Proposed Development – refer to Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2).
Chapter 12: Ecology	The Inspectorate	Bat activity surveys along the Connection Corridors. The Scoping Report identifies the intention to limit surveys to areas of suitable habitat where permanent effects e.g., loss are predicted. The Inspectorate accepts, as stated in Table 6-3 of the Scoping Report, that such surveys may not be warranted in relation to temporary habitat loss. However, the Inspectorate considers that they may be required to inform the assessment of likely significant effects and the design of appropriate mitigation in relation to the effects of construction lighting and effects resulting from impacts to linear habitat features.	Habitats were appraised for their suitability to support roosting, foraging and commuting bats during the Extended Phase 1 Habitat Survey (Appendix 12A: Phase 1 Habitat and Botanical Survey Report (ES Volume III, EN070009/APP/6.4)). Bat activity surveys have been completed and the results are presented in Appendix 12C: Bat Survey

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		<p>These matters should be considered in the ES where likely significant effects could occur, supported by appropriate evidence such as bat activity survey data. The Applicant should seek agreement from relevant consultees and provide a description of the approach taken in the ES, incorporating any relevant advice.</p>	<p>Report (ES Volume III, EN070009/APP/6.4). The development has been designed to avoid the loss of habitats such as ponds and woodland. Any sections of hedgerows which will be lost during the construction phase will be reinstated. Construction phase lighting will be minimised and works will be timed to avoid disturbance to foraging and commuting bats (refer to Appendix C: Indicative Lighting Strategy (Construction) of the Framework CEMP (EN070009/APP/5.12)).</p>
Chapter 12: Ecology	The Inspectorate	<p>Air quality effects on sensitive ecological receptors. The Scoping Report states that air quality impacts from construction traffic emissions and operational emissions will be considered but does not specify for which pollutants. Section 6.2 (air quality) of the Scoping Report identifies which pollutants are proposed to be assessed but does not reference nitrogen deposition or acid deposition as potential impacts which could affect sensitive ecological receptors.</p> <p>For the avoidance of doubt, the potential for nitrogen deposition and/or acid deposition to arise and result in effects on ecological receptors should be considered in the ES, and subject to assessment where a pathway for significant effects is identified.</p>	<p>Air quality effects, including nitrogen deposition, are discussed in Section 8.6 of Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2) and within the report to inform HRA (EN070009/APP/5.10).</p>

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Chapter 12: Ecology	The Inspectorate	<p>GCN – information to support of assessment of effects. With regard to the Proposed Development site to the north of the River Tees, the Scoping Report states it is proposed to consult NE about whether a District Level Licensing (DLL) approach would be available for this project. If not, it is proposed to undertake habitat suitability assessment surveys to inform the assessment in the ES, in addition to eDNA and/or presence/absence surveys. It also sets out the circumstances where population size class assessment surveys may be undertaken to inform the assessment of effects.</p> <p>The Inspectorate is content with this approach to GCN.</p> <p>The Applicant’s attention is drawn to Natural England’s comments in Appendix 2 and the Inspectorate’s Advice Note 11, Annex C.</p>	<p>A district level licence will be used to avoid significant effects upon GCN. We will continue to work with NE to obtain the IACPC.</p>
Chapter 12: Ecology	The Inspectorate	<p>Otter and water vole surveys. The Scoping Report states that presence/absence surveys will be undertaken in locations where open cut crossings of watercourses and ditches will be required.</p> <p>The Inspectorate notes that trenchless crossings are proposed at several locations, but no information is presented as to whether otter or water vole are likely to be present here and/or whether crossing installation would generate potential impact pathways.</p> <p>The survey area should include trenchless crossing locations, or the ES should otherwise demonstrate why a significant effect is not likely to occur in these locations.</p>	<p>Otter and water vole surveys have been completed to inform the ecological baseline and the results are presented in Appendix 12-F: Water Vole and Otter Survey Report (ES Volume III, EN070009/APP/6.4). The Proposed Development has been designed to avoid impacts upon watercourses through non-intrusive techniques (e.g., Horizontal Directional Drilling (HDD)) and use of existing access tracks / pipeline racking.</p>

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Chapter 12: Ecology	The Inspectorate	<p>Detailed surveys for reptiles, freshwater species, terrestrial vertebrates and plants. The Scoping Report states that the requirement for species' surveys will be informed by further desk-based assessment and the findings of the Phase 1 Habitat survey.</p> <p>The Inspectorate agrees with the approach set out. Effort should be made to agree the survey scope and methodology with the relevant consultation bodies.</p>	<p>The scope of surveys necessary to inform The Proposed Development was discussed with Natural England. This is described in Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2).</p>
Chapter 12: Ecology	The Inspectorate	<p>Biodiversity net gain (BNG). The Scoping Report states that the project will aspire to achieve net gain and that a BNG assessment will be undertaken. The ES should clearly distinguish between mitigation for significant adverse effects on biodiversity from wider enhancement measures. The Applicant's attention is drawn to Natural England's comments in Appendix 2 regarding the latest Biodiversity Metric 4.0.</p>	<p>For the reasons given in the Planning Statement (EN070009/APP/5.2), the Applicant has not submitted a Biodiversity Net Gain Report/Assessment based on the BNG Metric as part of its DCO Application for the Proposed Development. However, the Applicant's proposals for gains/enhancements are set out in the Outline Landscape and Biodiversity Management Plan (EN070009/APP/5.9). The measures in the latter will be developed into a Full LBMP to reflect the detailed design (and impacts) of the Proposed Scheme, in substantial accordance with that outline. This is secured through the DCO. Through these measures, the Applicant will be able</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
			<p>to deliver a commitment to no net loss, as a minimum.</p> <p>Furthermore, the Applicant is keen to secure enhancements in the wider Teesside area off-site from the Order limits and is working with stakeholders such as the EA, Natural England, Tees Rivers Trust, Teesside Environmental Trust, INCA, and RPSB to develop proposals in this regard.</p> <p>Whilst the Applicant does not propose to quantify these in BNG metric terms at this point in time, it is hoped that such measures, to be secured through a section 106 Agreement, will be able to demonstrate a wider qualitative net gain overall as a result of the Proposed Development.</p>
Chapter 12: Ecology	The Inspectorate	<p>Scope of assessment. The assessment of temporary disturbance impacts to habitats should include consideration of likely significant effects arising from the construction of the hydrogen pipeline in proximity to Greatham Creek and Saltern Wetlands.</p> <p>The Applicant's attention is drawn to the EA's comments in Appendix 2 in this regard.</p>	<p>Trenchless crossing techniques will be used to avoid adverse effects upon Greatham Creek and Saltern Wetlands.</p> <p>A framework CEMP is provided and details measures to prevent adverse effects on habitats during</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
			construction (Framework CEMP, EN070009/APP/5.12).
Chapter 12: Ecology	The Inspectorate	Confidential annexes. Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ecological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in an ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	Information on sensitive ecological receptors (birds) is provided within a confidential annex as requested (Appendix 13A, ES Volume III, EN070009/APP/6.4). No evidence of badger was recorded during the surveys.
Chapter 12: Ecology	The Inspectorate	The Scoping Report states that temporary effects to water quality during construction would be considered but does not reference potential effects during operation, for example from spillages or discharges, extraction of water and/ or effluent discharge. The ES should include an assessment of this matter or otherwise demonstrate why significant effects are not likely to occur. Cross reference should be made to the assessment in the Surface Water, Flood Risk and Water Resources ES Chapter.	Effects upon water quality during construction, operation and decommissioning are assessed in ES Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2), and potential effects on aquatic ecology are assessed in this chapter and cross-referenced accordingly.
Chapter 12: Ecology	The Inspectorate	The Scoping Report states that the requirement for species' surveys will be informed by further desk-based assessment and the findings of the Phase 1 Habitat survey.	Phase 1 habitat surveys, botanical assessments and protected and notable species surveys have been

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		The Inspectorate agrees with the approach set out. Effort should be made to agree the survey scope and methodology with the relevant consultation bodies. The ES should include an assessment of likely significant effects to these receptors where these could occur, or information demonstrating absence of a likely significant effect and where agreement has been reached with relevant consultation bodies.	completed to inform the ecological baseline. The results of these surveys are detailed within appendices 12A – 12G (ES Volume III, EN070009/APP/6.4). and the potential effects assessed within this chapter.
Chapter 12: Ecology	The Inspectorate	Consider potential effects from noise and vibration on migratory fish.	The impact of Noise and vibration on migratory fish has been considered in Chapter 12: Ecology and Nature Conservation and Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2).
Chapter 12: Ecology	The Inspectorate	The assessment of temporary disturbance impacts to habitats should include consideration of likely significant effects arising from the construction of the hydrogen pipeline in proximity to Greatham Creek and Saltern Wetlands. The Applicant's attention is drawn to the EA's comments in Appendix 2 in this regard.	Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2) has considered temporary disturbance impacts to habitats arising from the construction of the hydrogen pipeline in proximity to Greatham Creek and Saltern Wetlands.
Chapter 12: Ecology	Natural England	Cumulative and in-combination effects. Natural England acknowledges the applicant's description of projects needing to be assessed for cumulative and in combination effects alongside the proposal. We are not aware of additional projects needing assessment. We draw the examining	The potential for in combination effects has been assessed in Chapter 23: Cumulative and Combined Effects (ES Volume I, EN070009/APP/6.2), a

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		<p>authority's attention to the need for and benefits of an early consideration of the proposal's relationship with wider environmental issues in the Tees estuary e.g. the nutrient neutrality theme and the wider need to restore water quality in the Tees catchment to achieve favourable condition of relevant water dependent designated sites such as the Teesmouth & Cleveland Coast Special Protection Area (SPA). For further information please see our comments under Section 9 Water Quality. Further relevant references are made within section 4 (Biodiversity & Geodiversity), with respect to ecological impact pathways for designated sites and Section 10 Climate Change – delivering mitigation and building resilience.</p>	<p>Nutrient Neutrality Assessment (EN070009/APP/5.13) and the Report to inform HRA (EN070009/APP/5.10).</p>
Chapter 12: Ecology	Natural England	<p>Environmental Data. At the time of writing Natural England is arranging to provide the applicant with wild bird survey data for the 'Seal Sands' part of the Teesmouth & Cleveland Coast Special Protection Area (SPA). Similarly we are checking the scope for use of the GCN District Level Licensing scheme in relation to land within (or up to 250m from) the red line boundary lying north of the River Tees.</p>	<p>Bird survey data has been referenced in Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2).</p>
Chapter 12: Ecology	Natural England	<p>The assessment will need to include potential impacts of the proposal upon sites and features of nature conservation interest. We welcome the applicant's approach to gathering relevant data so far and for their reference to including opportunities for nature recovery through biodiversity net gain (BNG).</p>	<p>For the reasons given in the Planning Statement (EN070009/APP/5.2), the Applicant has not submitted a Biodiversity Net Gain Report/Assessment based on the BNG Metric as part of its DCO Application for the Proposed Development However, the Applicant's proposals for gains/enhancements are set out in the Outline Landscape and</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
			<p>Biodiversity Management Plan (EN070009/APP/5.9). The measures in the latter will be developed into a Full LBMP to reflect the detailed design (and impacts) of the Proposed Scheme, in substantial accordance with that outline. This is secured through the DCO. Through these measures, the Applicant will be able to deliver a commitment to no net loss, as a minimum.</p>
Chapter 12: Ecology	Natural England	<p>The development site is within or may impact on European/internationally designated nature conservation sites.</p> <p>Aside from the Teesmouth & Cleveland Coast SPA and Ramsar Site the proposal would not appear likely to cause direct impacts upon Habitats Sites within 15km of the application site.</p> <p>Nevertheless, based on the information available so far uncertainty exists over the scope for impacts on sites within this distance threshold. The Habitats Sites listed below fall within 15km of the proposal and have been listed accordingly to allow consideration of indirect effects from the proposal. We welcome inclusion of the listed Habitats Sites within paragraph 6.6.6 accordingly. Figure 13 of EIA scoping report shows these sites' geographical distribution.</p> <p>The ES should thoroughly assess the potential for the proposal to affect internationally designated sites of nature conservation importance/European sites, including marine sites where relevant. This</p>	<p>The ES assesses the potential for The Proposed Development to affect internationally designated sites of nature conservation importance/European sites, including marine sites where relevant.</p> <p>A report to inform HRA has been prepared (EN070009/APP/5.10).</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		<p>includes Special Protection Areas (SPA), Special Areas of Conservation (SAC), listed Ramsar sites, candidate SAC and proposed SPA.</p> <p>Article 6 (3) of the Habitats Directive requires an appropriate assessment where a plan or project is likely to have a significant effect upon a European Site, either individually or in combination with other plans or projects.</p>	
Chapter 12: Ecology	Natural England	<p>Natural England welcomes the applicant's approach to scoping whereby the hierarchy of designated and local wildlife sites has been considered holistically using a 15 km area of search. The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSIs and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.</p> <p>We welcome the applicant's proposal to include consideration of these effects within the Ecological impact assessment (EclA).</p>	<p>Comments noted. The ES includes an assessment of direct and indirect effects upon statutory designated sites in Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2) and the Report to Inform Habitats Regulations Assessment (EN070009/APP/5.10).</p>
Chapter 12: Ecology	Natural England	<p>The ES should assess the impact of all phases of the proposal on protected species (including, for example, GCN reptiles, birds, otter, water vole, badger and bats - paragraph 6.6.14 refers). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. The applicant should consider the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area.</p>	<p>Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2) assesses all phases of the Proposed Development. Desk studies and field surveys have been completed to inform the ecological baseline.</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		<p>The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.</p>	
<p>Chapter 12: Ecology</p>	<p>Natural England</p>	<p>Natural England is aware that the applicant is interested in district level licensing for relevant land (within the red line boundary or relevant distance threshold for GCN waterbodies). We will continue in dialogue with the applicant accordingly.</p> <p>For reference, where strategic approaches such as district level licensing (DLL) for GCN are used, a letter of no impediment (LONI) will not be required. Instead, the developer will need to provide evidence to the Examining Authority (ExA) on how and where this approach has been used in relation to the proposal, which must include a counter-signed Impact Assessment and Conservation Payment Certificate (IACPC) from Natural England.</p> <p>The DLL approach is underpinned by a strategic area assessment which includes the identification of risk zones, strategic opportunity area maps and a mechanism to ensure adequate compensation is provided regardless of the level of impact. In addition, Natural England will undertake an impact assessment, the outcome of which will be documented in the IACPC.</p> <p>If no GCN surveys have been undertaken, Natural England's risk zone modelling may be relied upon. During the impact assessment, Natural England will inform the Applicant whether their scheme is within one of</p>	<p>A district level licence will be used to avoid significant effects upon GCN. We will continue to work with NE to obtain the IACPC.</p>

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		<p>the amber risk zones and therefore whether the Proposed Development is likely to have a significant effect on GCN. The IACPC will also provide additional detail including information on the Proposed Development's impact on GCN and the appropriate compensation required.</p>	
Chapter 12: Ecology	Natural England	<p>Priority Habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. This is of special relevance to the application site, whose red line boundary contains a significant resource of 'open mosaic habitat' associated with the area's industrial land use.</p>	<p>Potential effects upon Habitats of Principal Importance are considered in the ES including open mosaic habitat on previously developed land.</p>
Chapter 12: Ecology	Natural England	<p>The ES should use an appropriate biodiversity metric such as Biodiversity Metric 4.0 together with ecological advice to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve a net gain.</p>	<p>For the reasons given in the Planning Statement (EN070009/APP/5.2), the Applicant has not submitted a Biodiversity Net Gain Report/Assessment based on the BNG Metric as part of its DCO Application for the Proposed Development. However, the Applicant's proposals for gains/enhancements are set out in the Outline Landscape and Biodiversity Management Plan (EN070009/APP/5.9). The measures in the latter will be developed into a Full LBMP to reflect the detailed design.</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
			(and impacts) of the Proposed Scheme, in substantial accordance with that outline. This is secured through the DCO. Through these measures, the Applicant will be able to deliver a commitment to no net loss, as a minimum.
Chapter 12: Ecology	Natural England	We welcome detailed assessment of road traffic emissions and refer the applicant to our guidance for public bodies to help assess the impacts of road traffic emissions to air quality capable of affecting European Sites.	The potential for changes in air quality to affect European designated sites is assessed in Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2) and the Report to inform HRA (EN070009/APP/5.10).
Chapter 12: Ecology	Natural England	<p>The Teesmouth & Cleveland Coast SPA and Ramsar site includes areas of the River Tees channel, the Tees Estuary, and the Tees Bay. Natural England's advice is that qualifying bird species are being negatively affected by the growth of algal mats on their key foraging habitats within the Tees Estuary, particularly at Seal Sands.</p> <p>As such, Natural England's Nutrient Neutrality advice is that new developments should not result in additional nitrogen entering the catchment of the River Tees upstream of the SPA and Ramsar site (i.e. they are nutrient neutral). The Habitats Regulations Assessment (HRA) process provides the means to assess the proposal and we acknowledge paragraphs 6.6.27-31 accordingly.</p>	Nutrient Neutrality Assessment is included in the Application (EN070009/APP/5.13) and is referenced within the Report to Inform HRA (EN070009/APP/5.10).

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		<p>Natural England looks forward to continued dialogue with the applicant to progress this element of the proposal.</p>	
<p>Chapter 12: Ecology</p>	<p>Natural England</p>	<p>Natural England notes and acknowledges the proposal's primary purpose i.e. to produce low carbon hydrogen and capture and store carbon. In terms of climate change mitigation over and above the scheme's primary purpose the proposal also offers scope to:</p> <ul style="list-style-type: none"> (i) Deliver nature recovery/enhancement (ii) Build ecosystem resilience through careful planning and implementation e.g. with reference to consideration of ongoing wider efforts to restore water quality in the Tees estuary. These include but are not restricted to the provisions of the Levelling up and Regeneration Bill which requires relevant water companies to upgrade the performance of wastewater treatment works to 'technically achievable limits' by 2030. <p>The applicant should explore opportunities to achieve a design solution that optimises the scope to deliver relevant technological advances and land management in the local area over the development's lifetime.</p>	<p>For the reasons given in the Planning Statement (EN070009/APP/5.2), the Applicant has not submitted a Biodiversity Net Gain Report/Assessment based on the BNG Metric as part of its DCO Application for the Proposed Development. However, the Applicant's proposals for gains/enhancements are set out in the Outline Landscape and Biodiversity Management Plan (EN070009/APP/5.9). The measures in the latter will be developed into a Full LBMP to reflect the detailed design (and impacts) of the Proposed Scheme, in substantial accordance with that outline. This is secured through the DCO. Through these measures and engagement with the Environment Agency, Natural England, RSPB, Tees Rivers Trust, Teesside Environmental Trust and INCA, the Applicant will be able to deliver a</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
			commitment to no net loss, as a minimum.
Chapter 12: Ecology	Environment Agency	<p>R1 crosses the no. 4 brinefield (owned by Sabic and used for hydrocarbon storage), and under the flood embankment on the south bank of Greatham Creek (Sabic Embankment). It also lies under the flood embankment on the north bank of Greatham Creek, which is to be significantly repaired as part of EA's Greatham North East Flood Alleviation Scheme (FAS). This route also crosses the redundant no. 5 brinefield (owned by Inovyn Chlorvinyl Ltd) and the ConocoPhillips oil pipeline corridor and Seal Sands Emergency Access Road. The EA is also developing a scheme (Greatham North East FAS) to improve the defences to the south of the Venator Plant. We expect to submit an application for planning permission in Spring 2024 and hope to start construction of the scheme in summer 2024. We are currently seeking contributions from beneficiaries of the scheme.</p> <p>As the proposed pipeline could benefit from our works, we would welcome discussions with the applicant on the potential for financial contributions from DCO, if R1 is chosen as the preferred route.</p>	Ongoing consultation with the Environment Agency will seek to identify opportunities to deliver wider ecological and environmental benefits as a result of the Proposed Development.
Chapter 13: Ornithology	The Inspectorate	The ES should give a full description of how areas of Functionally Linked Land have been identified for survey, the levels of precaution applied to this process, and the outcomes of consultation and degree of agreement reached with key stakeholders. It is also advised that the scope and methodology of the ornithological surveys is discussed with the relevant consultees and agreed where possible.	A selection of shortlisted sites for the proposed hydrogen generating infrastructure was identified in 2021. Based on the Proposed Development design iterations at that time, and ongoing design development since then, three broad survey areas were

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			<p>identified. These survey areas are functionally linked to sites designated for their ornithological interest.</p> <p>The spatial, temporal and technical scope of surveys was discussed with Natural England during an initial engagement meeting in February 2022, to discuss the early phase of the Proposed Development.</p>
Chapter 13: Ornithology	The Inspectorate	<p>In addition to the impact pathways identified in the Scoping Report, the Inspectorate advises that consideration should be given to the potential for operational discharges to water to result in likely significant effects to bird qualifying features of the Teesmouth and Cleveland Coast Special Protection Area and Ramsar.</p> <p>The ES should include an assessment of these matters where significant effects are likely, or otherwise provide evidence to demonstrate why significant effects are not likely.</p>	<p>This recommendation has been followed in Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2), which includes a full assessment of the potential effects on birds due to operational discharges to water.</p>
Chapter 13: Ornithology	The Inspectorate	<p>Confidential Annexes: Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ornithological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in</p>	<p>Information on the whereabouts of sensitive ornithological features will be redacted for a publicly available version of Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2) and Appendix 13A: Ornithology Baseline (ES Volume III, EN070009/APP/6.4). Circulation of full versions of these</p>

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		the ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	documents will be restricted to specific stakeholders including but not necessarily limited to Natural England and Royal Society for the Protection of Birds.
Chapter 13: Ornithology	The Inspectorate	Public bodies have a responsibility to avoid releasing environmental information that could bring about harm to sensitive or vulnerable ornithological features. Specific survey and assessment data relating to the presence and locations of species such as badgers, rare birds and plants that could be subject to disturbance, damage, persecution, or commercial exploitation resulting from publication of the information, should be provided in the ES as a confidential annex. All other assessment information should be included in the ES chapter, as normal, with a placeholder explaining that a confidential annex has been submitted to the Inspectorate and may be made available subject to request.	Information on sensitive ornithological features has been provided in a confidential appendix to the ES as requested (Appendix 13A: Ornithology Baseline (ES Volume III, EN070009/APP/6.4)).
Chapter 13: Ornithology	Natural England	Cumulative and in-combination effects. Natural England acknowledges the applicant's description of projects needing to be assessed for cumulative and in combination effects alongside the proposal. We are not aware of additional projects needing assessment. We draw the examining authority's attention to the need for and benefits of an early consideration of the proposal's relationship with wider environmental issues in the Tees estuary e.g. the nutrient neutrality theme and the wider need to restore water quality in the Tees catchment to achieve favourable condition of relevant water dependent designated sites such as the Teesmouth & Cleveland Coast Special Protection Area (SPA). For further information please see our comments under Section 9 Water Quality. Further relevant	The potential for cumulative and in-combination effects has been assessed. Nutrient neutrality has been screened in for likely significant effects and is considered within the ES and Report to inform HRA. Further information is provided in the Nutrient Neutrality Assessment (EN070009/APP/5.10).

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		<p>references are made within section 4 (Biodiversity & Geodiversity), with respect to ecological impact pathways for designated sites and Section 10 Climate Change – delivering mitigation and building resilience.</p>	
Chapter 13: Ornithology	Natural England	<p>Environmental Data. At the time of writing Natural England is arranging to provide the applicant with wild bird survey data for the ‘Seal Sands’ part of the Teesmouth & Cleveland Coast Special Protection Area (SPA).</p>	<p>Survey data was received from Natural England on 7 September 2023 and has been used in the assessments of effects on birds reported in the ES.</p>
Chapter 13: Ornithology	Natural England	<p>The assessment will need to include potential impacts of the proposal upon sites and features of nature conservation interest. We welcome the applicant’s approach to gathering relevant data so far and for their reference to including opportunities for nature recovery through biodiversity net gain (BNG).</p>	<p>Potential impacts on sites and features of ornithological importance has been identified and assessed within the ES. For the reasons given in the Planning Statement (EN070009/APP/5.2), the Applicant has not submitted a Biodiversity Net Gain Report/Assessment based on the BNG Metric as part of its DCO Application for the Proposed Development However, the Applicant’s proposals for gains/enhancements are set out in the Outline Landscape and Biodiversity Management Plan (EN070009/APP/5.9). The measures in the latter will be developed into a Full LBMP to reflect the detailed design (and impacts) of the Proposed</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
			Scheme, in substantial accordance with that outline. This is secured through the DCO. Through these measures, the Applicant will be able to deliver a commitment to no net loss, as a minimum.
Chapter 13: Ornithology	Natural England	<p>The development site is within or may impact on European/internationally designated nature conservation sites.</p> <p>Aside from the Teesmouth & Cleveland Coast SPA and Ramsar Site the proposal would not appear likely to cause direct impacts upon Habitats Sites within 15km of the application site.</p> <p>Nevertheless, based on the information available so far uncertainty exists over the scope for impacts on sites within this distance threshold. The Habitats Sites listed below fall within 15km of the proposal and have been listed accordingly to allow consideration of indirect effects from the proposal. We welcome inclusion of the listed Habitats Sites within paragraph 6.6.6 accordingly. Figure 13 of EIA scoping report shows these sites' geographical distribution.</p> <p>The ES should thoroughly assess the potential for the proposal to affect internationally designated sites of nature conservation importance / European sites, including marine sites where relevant. This includes Special Protection Areas (SPA), Special Areas of Conservation (SAC), listed Ramsar sites, candidate SAC and proposed SPA.</p> <p>Article 6 (3) of the Habitats Directive requires an appropriate assessment where a plan or project is likely to have a significant effect upon a</p>	The ES assesses the potential for the Proposed Development to affect internationally designated sites of nature conservation importance/ European sites, including marine sites where relevant. A Report to inform the HRA (EN070009/APP/5.2), has been prepared to assess the potential for likely significant effects both alone and in-combination with other plans or projects.

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		European Site, either individually or in combination with other plans or projects.	
Chapter 13: Ornithology	Natural England	<p>Natural England welcomes the applicant's approach to scoping whereby the hierarchy of designated and local wildlife sites has been considered holistically using a 15Km area of search. The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within the SSSIs and identify appropriate mitigation measures to avoid, minimise or reduce any adverse significant effects.</p> <p>We welcome the applicant's proposal to include consideration of these effects within the Ecological impact assessment (EclA).</p>	The ES includes an assessment of direct and indirect effects upon statutory designated sites.
Chapter 13: Ornithology	Natural England	<p>The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newt, reptiles, birds, otter, water vole, badger and bats - paragraph 6.6.14 refers). Natural England does not hold comprehensive information regarding the locations of species protected by law. Records of protected species should be obtained from appropriate local biological record centres, nature conservation organisations and local groups. The applicant should consider the wider context of the site, for example in terms of habitat linkages and protected species populations in the wider area.</p> <p>The area likely to be affected by the development should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES. Surveys</p>	Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2) has assessed the potential impacts of all phases of the project. Surveys have been undertaken and have been done at an appropriate time by experienced and appropriately licensed ecologists (where relevant).

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		should always be carried out in optimal survey time periods and to current guidance by suitably qualified and, where necessary, licensed, consultants.	
Chapter 13: Ornithology	Natural England	Priority Habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land. This is of special relevance to the application site, whose red line boundary contains a significant resource of 'open mosaic habitat' associated with the area's industrial land use.	Potential effects upon bird Species of Principal Importance have been considered in Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2).
Chapter 13: Ornithology	Natural England	We welcome detailed assessment of road traffic emissions and refer the applicant to our guidance for public bodies to help assess the impacts of road traffic emissions to air quality capable of affecting European Sites.	The potential for changes in air quality to affect European designated sites has been assessed in Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2).
Chapter 13: Ornithology	Natural England	The Teesmouth & Cleveland Coast SPA and Ramsar site includes areas of the River Tees channel, the Tees Estuary, and the Tees Bay. Natural England's advice is that qualifying bird species are being negatively affected by the growth of algal mats on their key foraging habitats within the Tees Estuary, particularly at Seal Sands. As such, Natural England's Nutrient Neutrality advice is that new developments should not result in additional nitrogen entering the catchment of the River Tees upstream of the SPA and Ramsar site (i.e. they are nutrient neutral). The Habitats Regulations Assessment (HRA) process	A Nutrient Neutrality Assessment (EN070009/APP/5.13) has been prepared to accompany Chapter 24: Summary of Significant Effects (EN070009/APP/6.2) and Report to inform Habitats Regulations Assessment (HRA) (EN070009/APP/5.10) and submitted with the DCO Application.

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		<p>provides the means to assess the proposal and we acknowledge paragraphs 6.6.27-31 accordingly.</p> <p>Natural England looks forward to continued dialogue with the applicant to progress this element of the proposal.</p>	
Chapter 13: Ornithology	Natural England	<p>Natural England notes and acknowledges the proposal's primary purpose i.e., to produce low carbon hydrogen and capture and store carbon. In terms of climate change mitigation over and above the scheme's primary purpose the proposal also offers scope to:</p> <ul style="list-style-type: none"> (i) Deliver nature recovery/enhancement (ii) Build ecosystem resilience through careful planning and implementation e.g., with reference to consideration of ongoing wider efforts to restore water quality in the Tees estuary. These include but are not restricted to the provisions of the Levelling up and Regeneration Bill which requires relevant water companies to upgrade the performance of wastewater treatment works to 'technically achievable limits' by 2030. <p>The applicant should explore opportunities to achieve a design solution that optimises the scope to deliver relevant technological advances and land management in the local area over the development's lifetime.</p>	<p>For the reasons given in the Planning Statement (EN070009/APP/5.2), the Applicant has not submitted a Biodiversity Net Gain Report/Assessment based on the BNG Metric as part of its DCO Application for the Proposed Development. However, the Applicant's proposals for gains/enhancements are set out in the Outline Landscape and Biodiversity Management Plan (EN070009/APP/5.9). The measures in the latter will be developed into a Full LBMP to reflect the detailed design (and impacts) of the Proposed Scheme, in substantial accordance with that outline. This is secured through the DCO. Through these measures, the Applicant will be able to deliver a commitment to no net loss, as a minimum.</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
			<p>Furthermore, the Applicant is keen to secure enhancements in the wider Teesside area off-site from the Order limits and is working with stakeholders such as the EA, Natural England, RPSB, Tees Rivers Trust, Teesside Environmental Trust and INCA to develop proposals in this regard. Whilst the Applicant does not propose to quantify these in BNG metric terms at this point in time, it is hoped that such measures, to be secured through a section 106 Agreement, will be able to demonstrate a wider qualitative net gain overall as a result of the Proposed Development.</p>
Chapter 13: Ornithology	Environment Agency	<p>R1 crosses the no. 4 brinefield (owned by Sabic and used for hydrocarbon storage), and under the flood embankment on the south bank of Greatham Creek (Sabic Embankment). It also lies under the flood embankment on the north bank of Greatham Creek, which is to be significantly repaired as part of EA's Greatham North East Flood Alleviation Scheme (FAS). This route also crosses the redundant no. 5 brinefield (owned by Inovyn Chlorvinyl Ltd) and the ConocoPhillips oil pipeline corridor and Seal Sands Emergency Access Road. The EA is also developing a scheme (Greatham North East FAS) to improve the defences to the south</p>	<p>Ongoing consultation with the Environment Agency will seek to identify opportunities to deliver wider ecological and environmental benefits as a result of The Proposed Development.</p> <p>Baseline ornithology data gathered by sub consultants to support the EA's design and impact assessment for the</p>

CHAPTER	CONSULTEE	SUMMARY OF COMMENT	RESPONSE
		<p>of the Venator Plant. We expect to submit an application for planning permission in Spring 2024 and hope to start construction of the scheme in summer 2024. We are currently seeking contributions from beneficiaries of the scheme.</p> <p>As the proposed pipeline could benefit from our works, we would welcome discussions with the applicant on the potential for financial contributions from DCO, if R1 is chosen as the preferred route.</p>	<p>Flood Alleviation Scheme have been received from the EA and are referenced in Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2) and Appendix 13A: Baseline Ornithology Report (ES Volume III, EN070009/APP/6.4).</p>
Chapter 14: Marine Ecology	The Inspectorate	<p>The inspectorate agrees that effects to the Southern North Sea SAC can be scoped out of the ES on the basis that the site is over 100km from the Proposed Development and there are no impact pathways from underwater sound.</p>	<p>This comment is acknowledged. This SAC was scoped out from further assessment as outlined in Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2) and therefore has not been considered further.</p>
Chapter 14: Marine Ecology	The Inspectorate	<p>The Inspectorate agrees that marine mammal and benthic ecology surveys can be scoped out on the basis set out in the Scoping Report.</p> <p>With regard to fish surveys, the Inspectorate notes that potential impact pathways from underwater sound, and possibly entrapment and entrainment have been identified.</p>	<p>Fish and shellfish surveys are considered to be unnecessary and have not been conducted due to the use of trenchless technologies, which are considered to be the most appropriate construction method to avoid any adverse impacts to this receptor.</p> <p>Furthermore, new water abstraction points are not part of the Proposed Development, meaning that there are no potential impact pathways to fish</p>

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			and shellfish from underwater sound or entrapment and entrainment.
Chapter 14: Marine Ecology	The Inspectorate	The Scoping Report does not include any information about the predicted noise and vibration levels from the proposed works or sensitivity of ecological receptors. The Inspectorate therefore does not have sufficient information to reasonably conclude that there will be no likely significant effects.	Airborne sound modelling has been undertaken and the results are discussed in Section 14.6. A list of potential construction activities near Greatham Creek and predicted sound pressure levels are provided in Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2).
Chapter 14: Marine Ecology	The Inspectorate	The Scoping Report seeks to scope out effects from underwater sound. The Inspectorate notes that the proposed hydrogen pipeline would cross the tidal River Tees and that there is potential for noise and vibration impacts arising from construction of the pipeline to migratory fish. This matter should be assessed in the ES.	The effects from underwater sound are scoped out from further assessment as outlined in Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2) and therefore has not been considered further. It is assumed at this stage that the depths of the trenchless technologies (such as HDD) will be such that there is no pathway for effects to marine ecological receptors. It is also assumed that the works will be through bedrock below marine sediment and at a sufficient depth where underwater sound effects to

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			<p>migratory fish are likely to be negligible. This is in line with the current tunnelling methodology which states a tunnelling depth of 10 m below the riverbed at Greatham Creek will be achieved. Therefore, it is considered that underwater sound effects as a result of trenchless technologies (such as HDD) will not result in likely significant effects and can be scoped out from further assessment.</p>
Chapter 14: Marine Ecology	The Inspectorate	<p>The Inspectorate notes that permanent loss of habitat in the intertidal area is not proposed but if the approach changes, consideration would be given to the 'requirements of the Environment Act 2021' including a BNG assessment.</p>	<p>There is still no proposed permanent loss of habitat in the intertidal area.</p>
Chapter 14: Marine Ecology	The Inspectorate	<p>The Inspectorate draw the Applicant's attention to the EA's comments regarding the presence of coastal saltmarsh habitat adjacent to Greatham Creek.</p> <p>The baseline habitat should be correctly described in the ES and supporting figures. The assessment of impacts arising from installation of the proposed pipelines should include consideration of this habitat and identify any mitigation required for likely significant effects, and how this would be secured in the DCO.</p>	<p>This habitat is located above the MHWS and is considered to be coastal / terrestrial. Habitats of this characterisation and any potential effects are considered in Chapter 12: Ecology and Nature Conservation (including aquatics) (ES Volume I, EN070009/APP/6.2). However, due to the use of HDD, effects to saltmarsh are scoped out.</p>

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Chapter 14: Marine Ecology	The Inspectorate	The ES should include an assessment of effects arising from the risk of fish entrapment and entrainment associated with abstraction of water from WFD waterbodies and/or cooling water systems required for the Proposed Development. The ES should identify any mitigation required, and how this would be secured in the DCO.	The effects to fish and shellfish from entrapment and entrainment are scoped out and have not been considered further. The Proposed Development will use water from existing sources; either raw water supply to the South Tees Development Corporation (STDC) site; or a new connection to the existing NWL supply either via tie in to NZT infrastructure or the installation of a new connection. Therefore, there is considered to be no impact pathway to fish and shellfish from entrapment and entrainment, and this will not be considered further.
Chapter 14: Marine Ecology	The Inspectorate	If cooling water is proposed to be discharged to the Tees Estuary or other WFD waterbodies, the ES should include an assessment of likely significant effects arising from thermal properties of the discharge of the cooling water.	There is potential for water discharge to have thermal effects. Water quality modelling for the discharge of cooling water has been undertaken, with an assessment of potential effects to the Tees Estuary or other WFD waterbodies provided in Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2).

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Chapter 14: Marine Ecology	The Inspectorate	If any hard structures (e.g. pipe outflow, rock armouring or equivalent) are proposed then the assessment of habitat loss and disturbance should also consider potential changes in coastal processes and introduction of invasive non-native species (INNS).	No hard structures are being placed in the marine environment. No pathway for the introduction of INNS through the placement of hard structures has been identified at this stage and therefore this has not been considered in the ES.
Chapter 14: Marine Ecology	Environment Agency	The applicant should be aware that large areas adjacent to Greatham Creek, which have been classified as 'Coastal and floodplain grazing marsh', are in fact coastal saltmarsh habitat as a result of the EA's managed realignment projects of 2014 and 2018 respectively.	This habitat is located above the MHWS and is considered to be coastal / terrestrial. The habitats of this classification and any potential effects are considered in Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2). However, due to the use of HDD, effects to saltmarsh are now scoped out.
Chapter 14: Marine Ecology	Environment Agency	It is preferred that the abstraction from WFD waterbodies is avoided where practicable to avoid the risk of fish entrainment. If abstraction from WFD waterbodies is proposed, the impact of fish entrainment should be assessed, and appropriate mitigation proposed to prevent entrainment.	The effects to fish and shellfish from entrapment and entrainment are scoped out and have not been considered further. The Proposed Development will use water from existing sources, either raw water supply to the South Tees Development Corporation (STDC) site; or a new connection to the existing

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			<p>NWL supply either via tie in to NZT infrastructure or the installation of a new connection. Therefore, there is considered no impact pathway to fish and shellfish from entrainment and mitigation measures will not be considered further.</p>
Chapter 14: Marine Ecology	Environment Agency	<p>If cooling waters is discharged to the Tees estuary or other WFD waterbodies, the implications of this in relation to WFD status will need to be fully considered. Thermal modelling will be required to assess the range of the thermal discharge.</p>	<p>There is potential for water discharge to have thermal effects. Water quality modelling for the discharge of cooling water has been undertaken, with an assessment of potential effects to the Tees Estuary or other WFD waterbodies provided in Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2).</p>
Chapter 14: Marine Ecology	Environment Agency	<p>It is unclear from the Scoping Report whether there is a potential for noise and / or vibration to occur during the creation of the hydrogen pipeline corridors. Therefore, the applicant should consider potential effects from noise and vibration on migratory fish.</p>	<p>Effects of noise and / or vibration to migratory fish are scoped out. It is assumed that the depths of the trenchless techniques (such as HDD 10 m below the riverbed at Greatham Creek crossing) will be such that there is no pathway for effect to marine ecological receptors. It is also assumed that the works will be through bedrock below marine</p>

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			<p>sediment and at a sufficient depth where underwater sound effects to migratory fish are unlikely. Therefore, underwater sound effects as a result of trenchless techniques have been scoped out from further assessment.</p>
Chapter 14: Marine Ecology	Natural England	<p>With all HDD there is a risk of 'frac-out'. Natural England recommend that the Construction and Environmental Management Plan (CEMP) or equivalent should include a frac-out contingency plan and a pollution incident response plan. These should detail the clean-up operation. We would expect to be consulted on the CEMP later in the DCO process.</p>	<p>On the basis of design and impact avoidance measures provided in the ES, the risk of frac-out events occurring is minimised. A site-specific hydraulic fracture risk assessment will be developed prior to construction of the Proposed Development, taking into account ground investigations. Therefore, the risk for 'frac-out' during HDD is considered negligible and has not been considered further. This impact pathway has been scoped out.</p> <p>A Hydraulic Fracture Risk Assessment will be developed prior to construction of the Proposed Development as described in the Framework CEMP (EN070009/APP/5.12).</p>

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Chapter 14: Marine Ecology	Natural England	The EIA scoping report is contradictory. Paragraph 6.8.27 suggests that UXO clearance measures are unlikely but Table B1 includes relevant screening measures. We would recommend that such measures are included. If not an explanation of the reasoning for omitting these measures should be provided.	Any impact pathways associated with UXO are scoped out from further assessment because there is no drilling or piling required in the marine environment.
Chapter 14: Marine Ecology	Natural England	Entrapment and entrainment within the water cooling system poses a risk to fish. Uptake of water for the water cooling system should consider all life stages of fish species and reduce fish entrainment.	<p>The effects to fish and shellfish from entrapment and entrainment are scoped out and have not been considered further.</p> <p>The Proposed Development will use water from the existing NWL raw water supply to the South Tees Development Corporation (STDC); or a new connection to the existing NWL supply either via tie in to NZT infrastructure or the installation of a new connection. Therefore, there is considered no impact pathway to fish and shellfish from entrapment and entrainment, and this will not be considered further.</p>
Chapter 14: Marine Ecology	Natural England	Hard structures (pipe outflow, rock armouring or equivalent) need to be assessed in the context not only of loss of habitat, but also potential changes in coastal processes and introduction of INNS.	No hard structures are being placed in the marine environment. At this stage, no pathway for the introduction of INNS has been

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		We note the applicant's reference to INNS and would advise a biosecurity plan, making sure everything brought to site (material/ gear/ water) has been assessed for INNS.	identified. Therefore, it was concluded that a biosecurity plan for INNS in the marine environment is not required and therefore this has not been produced.
Chapter 14: Marine Ecology	Natural England	The ES should use an appropriate biodiversity metric such as Biodiversity Metric 4.0 together with ecological advice to calculate the change in biodiversity resulting from proposed development and demonstrate how proposals can achieve a net gain.	Permanent loss of habitat in the intertidal area is not proposed.
Chapter 15: Traffic and Transport	The Inspectorate	<p>Impacts from operational traffic. The Scoping Report seeks to scope out operational road traffic flows from detailed assessment, stating that the anticipated maximum workforce of 85 staff on site within a 24-hour period is unlikely to give rise to significant effects. This approach is to be agreed with the Local Highway Authority.</p> <p>Having considered the nature and characteristics of the Proposed Development, the Inspectorate agrees that subject to confirmation of the number and type of all operational vehicle movements (i.e. HGVs in addition to staff) in the ES description of development, operational traffic movements are not likely to result in significant effects and that an assessment of this matter can be scoped out of the ES. Agreement should be sought from the relevant Highways Authority.</p>	Construction impacts have been assessed within the ES, with the operational and decommissioning phases not considered to result in a severe impact upon the highway network and therefore scoped out. Once the Proposed Development is operational, traffic flows are therefore expected to be very low – and therefore not considered to be severe.
Chapter 15: Traffic and Transport	The Inspectorate	Future baseline. The ES should clearly explain how the future baseline has been calculated and how this has considered other planned development in the area using the same road network during the construction period.	The future baseline is detailed in Chapter 15: Traffic and Transport (ES Volume I, EN070009/APP/6.2).

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Chapter 15: Traffic and Transport	The Inspectorate	Abnormal indivisible loads (AIL). The Scoping Report states that local ports are being considered for transport of AIL and that consideration will be given to the appropriate port and AIL routes during the design process. The ES should include an assessment of the likely significant effects arising from transportation of AIL via each proposed transportation method and identify any mitigation measures required and how these would be secured.	Details as applicable have been included in the ES. Although at this stage it is envisaged that most deliveries would be made via the Teesworks Steel House Gate. In cases where abnormal loads are required that cannot pass under the existing bridge at the Teesworks Steel House Gate entrance the alternative would be to use the unnamed private track.
Chapter 15: Traffic and Transport	The Inspectorate	Hazardous loads. The ES should include an assessment of likely significant effects arising from the transportation of hazardous loads during construction and operation of the Proposed Development, and identify any mitigation required (including drainage systems) and how this would be secured through the DCO.	Details as applicable have been included in Chapter 15: Traffic and Transport (ES Volume I, EN070009/APP/6.2).
Chapter 15: Traffic and Transport	National Highways	Further information required in relation to the following: <ul style="list-style-type: none"> • Peak construction flows; • The average car occupancy of 2.33; • Vehicle routings; • The impact upon the Strategic Route Network (SRN); Measures to be included within the Construction Traffic Management Plan (CTMP).	Further detail is included within Chapter 15: Traffic and Transport (ES Volume I, EN070009/APP/6.2), which sets out the peak construction traffic flows, the car occupancy assumed, vehicle routings and the impact upon the SRN. A CTMP (EN070009/APP/5.16) and CWTP (EN070009/APP/5.15) have been submitted as part of the ES.

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Chapter 16: Landscape and Visual	The Inspectorate	With regard to the night-time light pollution impacts the Scoping Opinion stated that <i>"...given the scale of the Proposed Development, the ES should provide an assessment of the effects of night-time light pollution on landscape and visual receptors during all phases of the Chapter 16: Landscape and Visual Proposed Development or provide further justification for why significant effects would not arise."</i>	A night-time assessment indicated that no significant effects are likely due to existing high levels of lighting within the Teesside area. The Proposed Development will follow recommendations as set out in the Indicative Lighting Strategy (Operation) that is included in the DCO Application (EN070009/APP/5.8). Notwithstanding these points, a night-time assessment on landscape and visual receptors is included in Chapter 16: Landscape and Visual (ES Volume I, EN070009/APP/6.2) which includes consideration of the light from the flare.
Chapter 16: Landscape and Visual	The Inspectorate	Requested that visual amenity receptors from the waterways are considered within the assessment.	Receptors on the River Tees and within Tees Bay and Estuary are considered at Viewpoint 4, North Gare Sands and Viewpoint 5 South Gare Breakwater.
Chapter 16: Landscape and Visual	The Inspectorate	The Scoping Opinion states that the <i>"ES should clearly evidence and justify the final extent of the ZTV used and ensure that any assessment of significance is based on the worst-case scenario. Effort should be made to agree the ZTV with relevant consultation bodies."</i>	The Study Area has been defined through desk and field-based analysis, and the extent of the potential for significant effects (further detail is included in Section 16.3 Assessment

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			<p>Methodology and Significance Criteria). Figure 16-3 (ES, Volume II, EN070009/APP/6.3) provides a ZTV, based on the tallest element of the Proposed Development and therefore indicates the worst-case extent of visibility. A request for consultation on the ZTV and representative viewpoints was issued to the relevant Local Planning Authorities and agreed with Hartlepool Borough Council, Middlesbrough Council, Redcar and Cleveland Borough Council, and Stockton-on-Tees Borough Council.</p>
Chapter 16: Landscape and Visual	The Inspectorate	Suggested viewpoint locations and requested viewpoint from the North York Moors National Park.	<p>The suggested viewpoint locations are included within this assessment, however there is unlikely to be significant effects at distances greater than 10 km from the Main Site.</p> <p>Although the ZTV shows theoretical visibility within the North York Moors National Park, as desk-based study and observations made during the site surveys concluded that there is very limited visibility in general due to the combination of intervening</p>

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			landform and vegetation to the south of the Study Area.
Chapter 16: Landscape and Visual	The Inspectorate	Requested that ES explains how the siting and design of proposed structures and materials have been selected to minimise impacts.	<p>Design impact avoidance measures are described within the Framework Construction Environmental Management Plan (CEMP) (EN070009/APP/5.12). The CEMP outlines how measures reported in the Landscape and Visual Assessment are employed during construction to reduce significant adverse effects associated with the Proposed Development. Refer to Framework CEMP (EN070009/APP/5.12).</p> <p>Section 4.6 Design Parameters within Chapter 4: Proposed Development (ES, Volume I, EN070009/APP/6.2) and Chapter 6: Alternatives and Design Evolution (ES Volume I, EN070009/APP/6.2) outlines the evolution of the design of the Proposed Development.</p>
Chapter 16: Landscape and Visual	The Inspectorate	Requested that ES describes any proposed planting, including establishment.	The Outline Landscape and Biodiversity Management Plan (LBMP) (EN070009/APP/5.9) outlines the

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			implementation of planting and biodiversity measures and includes an outline of establishment and long-term maintenance.
Chapter 16: Landscape and Visual	The Inspectorate	Requested that North Yorkshire Moors National Park is considered as a landscape receptor within the assessment.	The North York Moors is located outside the Study Area. Following refinement of the Study Area through desk-based study and observations made during the site surveys, it is concluded that there is very limited intervisibility to the south of the Study Area. As a result, it is unlikely that there will be significant effects at distances greater than 10 km from the Main Site. Therefore, North York Moors National Park is not included in the assessment due to the distance from the Proposed Development, limited nature of visibility, and existing industrial context to the setting of the Proposed Development when viewed from the National Park. The edge of the North York Moors is located approximately 10 km to the south east of the Main Site, whereas Viewpoint 10 is located approximately

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			6.5 km to the south east of the Main Site and represents elevated long range views from this direction. Refer to Appendix 16C: Potential Viewpoints for a description of all viewpoints taken forward for consideration in the assessment. The assessment of Viewpoint 10, Eston Nab, is included within section 16.5 Impacts and Likely Significant Effects.
Chapter 16: Landscape and Visual	The Inspectorate	Requested that viewpoints and photomontages are appropriate and representative and afford flexibility as the final design for the Proposed Development progresses.	Type 3 photomontages (Figures 16-7-1a to 16-7-4c: Photomontages (ES Volume II, EN070009/APP/6.3)) have been produced in accordance with Technical Guidance Note 06/2019: Visual Representation of Development Proposals (Landscape Institute, 2019).
Chapter 16: Landscape and Visual	Stockton-on-Tees Borough Council (STBC)	Requested an additional viewpoint from Royal Society for the Protection of Birds (RSPB) Saltholme, a popular visitor attraction with quite open and long-range views.	Viewpoints 13 and 14: RSPB Saltholme have been included as part of the visual assessment in this chapter.
Chapter 16: Landscape and Visual	Redcar and Cleveland	Suggested a study area extending up to 5 km from the River Tees. Longer distance views less critical and happy with one VP from the south at either Eston Nab or Longbeck Lane.	All requested viewpoints have been considered in the assessment and the Study Area has been refined to reflect

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	Borough Council (RCBC)	<p>Requested two viewpoints from the east at the England Coast Path and Warrenby & Coatham Marsh Nature Reserve.</p> <p>A maximum of 2 viewpoints from north of river in Hartlepool area.</p> <p>One or 2 viewpoints requested to the southwest and north of viewpoint M in the Easton area.</p>	<p>the ZTV. Longer distance views have been retained within other jurisdictions and to represent receptors using the England Coast Path.</p> <p>Additional viewpoints to the south-west of the Proposed Development at Priestman Road (Viewpoint O) and Cresswell Road, Grangetown (Viewpoint N) to the north of the Easton area were considered in response to these comments. These locations were visited and later discounted due to limited visibility as a result of intervening buildings and structures, therefore, no likely significant effects. Refer to Appendix 16C: Potential Viewpoints for a description of all viewpoints taken forward for consideration in the assessment.</p>
Chapter 16: Landscape and Visual	Middlesbrough Council (MC)	Suggested including viewpoints from Priestman Road near Temenos art installation, and the raised section of A66 further to south-west, both recognised as not particularly sensitive receptors.	A viewpoint (Viewpoint O) was included at Priestman Road and visited during the winter survey, but later discounted due to a lack of intervisibility and therefore would not

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			<p>give rise to likely significant effects. Refer to Appendix 16C: Potential Viewpoints for a description of all viewpoints taken forward for consideration in the assessment.</p> <p>There are no viewpoints from the A66 due to limited pedestrian access to bridges. Site survey confirmed the lack of intervisibility from the south-west due to intervening buildings and structures.</p>
Chapter 16: Landscape and Visual	Hartlepool Borough Council (HBC)	<p>Suggested that a Seascape Assessment would be beneficial and a viewpoint to be included at North Gare Breakwater.</p> <p>Confirmation received that viewpoint at North Gare Beach can be used to represent views from North Gare Breakwater.</p>	<p>A seascape assessment and a viewpoint at North Gare Beach have been included within the landscape and visual assessment.</p>
Chapter 17: Cultural Heritage	Historic England	<p>In line with the advice in the National Planning Policy Framework (NPPF 2021) and the relevant National Policy Statements (NPS), we would expect the Environmental Statement to contain a thorough assessment of the likely effects the proposed development might have upon those elements which contribute to the significance of these assets.</p>	<p>Chapter 17: Cultural Heritage (ES Volume I, EN070009/APP/6.2) presents the assessment of likely effects associated with the Proposed Development. The Historic England comments in the Scoping Opinion have been reviewed and taken into account in preparation of the ES.</p>

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Chapter 17: Cultural Heritage	Historic England	We would like to draw attention to the specific NPS documents and their policies in relation to the historic environment. We would expect to see these referred to in the cultural heritage section of the ES to show how the application complies with them.	The relevant NPS documents have been referenced in the ES.
Chapter 17: Cultural Heritage	Historic England	Our initial assessment broadly tallies with the baseline conditions set out in the scoping report. We concur that there are no highly designated heritage assets within the red-line boundary. However, we note that there are circa 700 non-designated heritage assets both within the boundary and the defined 1km study area.	Noted.
Chapter 17: Cultural Heritage	Historic England	The proposed pipeline across the Tees will be bored and therefore will not impact any maritime heritage assets in this area. We concur that it is unlikely that there will be any significant impacts on marine cultural heritage by this proposal as noted in 6.11.18 and consequently that marine heritage can be scoped out.	Noted.
Chapter 17: Cultural Heritage	Historic England	It is clear that the terrestrial cultural heritage must be scoped into the EIA as there could be impacts to known heritage assets. At present the potential for currently unrecorded heritage assets is not known and should also be included in the assessment.	The potential for currently unrecorded heritage assets is presented in Appendix 17A: Cultural Heritage Desk Based Assessment (ES Volume III, EN070009/APP/6.4).
Chapter 17: Cultural Heritage	Historic England	We expect the Environmental Statement to consider the potential impacts on non-designated features of historic, architectural, archaeological or artistic interest, since these can also be of national importance and make	The ES does consider potential impacts to non-designated heritage assets.

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		an important contribution to the character and local distinctiveness of an area and its sense of place.	
Chapter 17: Cultural Heritage	Historic England	We expect the assessment to clearly demonstrate that the extent of the proposed study area is of the appropriate size to ensure that all heritage assets likely to be affected by this development have been included and can be properly assessed.	The rationale for the Study Area is set out in Chapter 17: Cultural Heritage (ES Volume I, EN070009/APP/6.2).
Chapter 17: Cultural Heritage	Historic England	It is important that the assessment is designed to ensure that all impacts are fully understood. Pre-determination archaeological evaluation such as geophysical surveys and other evaluation techniques may assist with determination of archaeological potential and ground truthing of desk-based data.	Geotechnical data has been used to determine archaeological potential for the Main Site as set out in Appendix 17A: Cultural Heritage Desk Based Assessment (ES Volume III, EN070009/APP/6.4). A geophysical survey has been carried out over parts of the Proposed Development. Site not previously developed and the results have been incorporated into Section 17.9 of Appendix 17A (ES Volume III, EN070009/APP/6.4).
Chapter 17: Cultural Heritage	Historic England	The assessment should also take account of the potential impact associated activities (such as construction, servicing and maintenance, and associated traffic) might have upon perceptions, understanding and appreciation of the heritage assets in the area. The assessment should also consider, where appropriate, the likelihood of alterations to drainage	These matters have been considered in the ES, alongside potential impacts arising from construction noise, dust and vibration.

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		patterns that might lead to in situ decomposition or destruction of below ground archaeological remains and deposits and can also lead to subsidence of buildings and monuments.	
Chapter 17: Cultural Heritage	Historic England	We suggest that the applicant should seek advice from and liaise closely with the Local Planning Authority's Heritage / Archaeology Advisors for this application.	Consultation with the LPA's Heritage / Archaeology Advisors has been carried out during the preparation of the ES.
Chapter 17: Cultural Heritage	Hartlepool Borough Council - Tees Archaeology	Tees Archaeology agrees with the proposed scoping methodology for cultural heritage and agree that a cultural heritage DBA will be produced.	Noted.
Chapter 17: Cultural Heritage	RCBC	No comment from archaeology advisor to RCBC	Noted.
Chapter 17: Cultural Heritage	The Inspectorate	The Applicant intends to scope out direct impacts to marine cultural heritage assets during construction and operation of the Proposed Development. The Scoping Report states that no construction works are proposed in areas below MHWS where marine heritage assets are likely to be located and more highly concentrated. The Inspectorate agrees that based on the information provided, construction and operation of the Proposed Development is unlikely to give rise to significant effects from direct impacts to marine cultural heritage assets and is therefore content for this matter to be scoped out.	Noted.

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Chapter 17: Cultural Heritage	The Inspectorate	The Applicant proposes to scope out direct impacts to heritage assets located in the River Tees as construction methodologies such as HDD or Micro-bored Tunnel (MBT) will be utilised to minimise disturbance to sensitive receptors during construction of the hydrogen pipeline beneath the river. The Inspectorate agrees that based on the information provided, construction and operation of the Proposed Development is unlikely to give rise to significant effects from direct impacts to marine cultural heritage assets in the River Tees and therefore agrees that this matter can be scoped out.	Noted.
Chapter 17: Cultural Heritage	The Inspectorate	The Scoping Report states that a desk-based assessment would be produced. No reference is made to whether any further surveys are required to inform the archaeological baseline. The Inspectorate is of the opinion that should the desk-based assessment identify the need for further investigation, such as geophysical survey, monitoring of geotechnical ground investigations or trial trenching, the Applicant should make every effort to agree the scope of such activities with relevant consultation bodies. The results and assessment of effects to archaeology should be clearly presented within the ES along with a description of any uncertainties or assumptions applied, and confirmation of any further survey and evaluation required and how this would be secured.	Geophysical survey has been carried out to inform the ES and the results have been incorporated into Appendix 17A (ES Volume III, EN070009/APP/6.4). No further field investigations were deemed necessary to inform the DCO submission.
Chapter 17: Cultural Heritage	The Inspectorate	The ES should clearly describe how the final study areas have been defined according to sensitivity of receiving heritage assets and potential impacts during construction and operation of the Proposed Development. The Applicant should seek agreement with the relevant consultation bodies	The Applicant has agreed the study areas with the relevant consultation bodies. The Study Area has been defined in the ES.

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		regarding the study areas used to inform the assessment and evidence this in the ES.	
Chapter 17: Cultural Heritage	The Inspectorate	Indirect impacts to marine cultural heritage assets, such as temporary and permanent changes to their setting during construction and operation of the Proposed Development respectively, have not been explicitly identified in the Scoping Report. The ES should consider the potential for indirect impacts to marine heritage assets to give rise to likely significant effects or provide a justification as to why they would not experience significant effects.	Potential temporary and permanent changes to the settings of marine heritage assets, such as submerged wrecks and obstructions, as a result of the construction and operation of the Proposed Development have been included in the ES.
Chapter 17: Cultural Heritage	The Inspectorate	The ES should also assess effects to historic landscape character where significant effects are likely to occur.	The ES includes assessment of impact to the historic landscape character where significant effects are likely to occur.
Chapter 18: Socio- economics and Land Use	The Inspectorate	<p>The Scoping Report describes that parts of the proposed hydrogen pipeline corridor comprise BMV land under the Agricultural Land Classification (ALC) system. ALC Grade 2 land is located near Kirkleatham. Grade 3 land near Greatham is identified as being possible BMV land.</p> <p>The Applicant seeks to scope out effects on BMV land on the basis that impacts would be temporary during pipeline installation. It is stated that in the worst case scenario of open cut method, soil that is disturbed would be retained in-situ to infill the trench.</p> <p>The Scoping Report does not state the area of BMV land that would be affected or whether there would be a requirement for restrictions over the pipeline corridor during operation. No information is provided about soil handling and reinstatement following construction and/ or requirements</p>	Potential effects upon soils and agricultural land, including BMV land, are assessed in Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2). Chapter 18: Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2) has used these findings for the socioeconomic impacts of the potential effects on soils and agricultural land from the Proposed Development. This is

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		<p>for maintenance during operation. These matters should be addressed in the ES. The Inspectorate notes that National Policy Statement (NPS) EN-4, paragraph 2.23.7 requires information about mitigation measures for soil to be provided.</p> <p>The Inspectorate does not have sufficient information to agree that this matter can be scoped out of assessment. It is also noted that paragraph 3.5.3 of the Scoping Report states that the pipeline could be above ground and it is therefore unclear whether any BMV land would be permanently sterilised. The ES should provide an assessment of effects to BMV land and an explanation of how any loss of BMV land would be minimised, or demonstrate that impacts would not give rise to likely significant effects, including evidence of agreement with relevant consultation bodies.</p>	<p>assessed for all stages of the Proposed Development in this Chapter. Please refer to this and to Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2) for further detail on this assessment of the impacts.</p>
Chapter 18: Socio-economics and Land Use	The Inspectorate	The Scoping Report states that 2011 census data would be used. The Office for National Statistics (ONS) has commenced publication of 2021 census data and the Inspectorate advises that reference should be made to 2021 data where relevant to the assessment.	Census 2021 data has been incorporated into the ES.
Chapter 18: Socio-economics and Land Use	The Inspectorate	The Scoping Report does not reference potential impacts on housing during construction. It is noted that construction workforce peak will be approximately 3,100 people per day (paragraph 3.14.1 of the Scoping Report), but it is not stated whether these would be non-home-based workers or if there would be a requirement for temporary living accommodation. The Inspectorate advises that if a significant number of non-home based construction workers are required, this could foreseeably have an impact on local availability of affordable housing, including from cumulative effects with other large developments nearby.	The ES provides information on the main housing settlements near the Proposed Development. Potential impacts on increased demand for accommodation are considered within Chapter 18: Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2).

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		<p>The ES should provide an assessment of effects on the local private rented sector and tourist accommodation or demonstrate that impacts would not give rise to likely significant effects, including evidence of agreement with relevant consultation bodies.</p>	<p>The area surrounding the Proposed Development is mostly used for industrial land, and does not contain any tourism businesses or major tourism sites. Therefore, an assessment has not been undertaken for the impact on tourism accommodation.</p> <p>For non-home based construction workers, the assessment of employment effects in each stage of the Proposed Development considers the leakage of employment, whereby the proportion of employment originating from outside of the Wider Impact Area is considered. A value of 25% for leakage has been applied to gross construction job estimates, in line with HCA Additionality Guidance (HCA, 2014), as it is expected that the majority of employment in this stage will originate from the Middlesbrough and Stockton TTWA.</p> <p>In addition to this assessment, the effects on the local private rented sector and temporary workers</p>

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			<p>accommodation have been further assessed for significance. This includes an assessment of available bedspaces and capacity in the private rented sector.</p> <p>The peak number of workers present on site will be between approximately 800 and 1,300 workers. The proposed development is assumed to create 60 gross direct operational jobs per annum.</p>
Chapter 19: Climate	The Inspectorate	<p>GHG emissions arising from disturbance of landfill sites</p> <p>Figure 10 of the Scoping Report shows that there are active and historic landfill sites present within the Proposed Development Site. There is a potential that underground construction works could lead to GHG emission from these sites that should be included in the assessment.</p>	The ES acknowledges the potential for GHG emissions from disturbing landfill sites in Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2).
Chapter 19: Climate Change	The Inspectorate	<p>Carbon Capture</p> <p>The scoping report states that CO₂ will be captured at a rate of 95%, secured through an environmental permit. Should the draft DCO allow for generating station to operate independently of carbon capture a worst-case assessment of emissions should be undertaken.</p>	It is a fundamental assumption of the project that CO ₂ will be captured. An assessment of the impact without carbon capture has been made in response to this request in Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2).

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Chapter 19: Climate Change	The Inspectorate	<p>CO₂ Emissions</p> <p>The CO₂ generated from the Proposed Development is proposed to be exported via the proposed NZT project and to the proposed NEP offshore storage. The ES should describe the status of these projects and any uncertainty around this method of exportation and/or alternative proposals.</p> <p>Please refer to the Inspectorate's comments at ID 2.1.3 of this Scoping Opinion regarding assessment of CO₂ emissions should the DCO seek or allow for powers for the generating station component to operate independently of the carbon capture.</p>	<p>It is a fundamental assumption of the project that CO₂ will be captured. An assessment of the impact without carbon capture has been made in response to this request in Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2). This assumption is based on the Net Zero Teesside having been granted consent on 14 February 2024.</p>
Chapter 19: Climate Change	The Inspectorate	<p>CH₄</p> <p>The ES should include consideration of CH₄ emissions as part of the GHG assessment or otherwise demonstrate why the emissions are so small so as not to result in likely significant effects. The ES should describe any mitigation required in respect of CH₄ emissions and confirm how this would be secured in the DCO.</p>	<p>CH₄ emissions are considered in Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2) where the well-to-tank emission factor used for CH₄ supply is processed into hydrogen as the first step. CH₄ leakage is accounted for in the ESNZ well-to-tank emission factors used.</p>
Chapter 20: Major Accidents and Disasters	The Inspectorate	<p>An assessment of the potential for leaks and spills of specified substances (including diesel and aqueous ammonia) to the water environment due to road traffic accident or similar should be conducted.</p>	<p>A risk event concerning a loss of containment due to a road traffic accident has been considered at the long list stage. A Traffic Management Plan is in place for the Proposed Development's operational phase</p>

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			<p>which mitigates against a road traffic accident resulting in a spill.</p> <p>This matter has been addressed within the ES.</p>
Chapter 20: Major Accidents and Disasters	The Inspectorate	Marine accidents may be scoped out.	This matter has been scoped out.
Chapter 20: Major Accidents and Disasters	The Inspectorate	Given that hydrogen is an emerging technology, the risk of a failure of electricity supply or other systems / utilities should be assessed, including information on how the risks would be managed, including design standards proposed and why these are appropriate, alongside an outline of any management plans.	A risk event concerning a failure in electricity supply has been considered at the long list stage. Backup power generation will be included in the final detailed design to mitigate against a loss of power. Process equipment and instrumentation will be designed to fail to a safe condition. Further detail regarding the proposed backup generation has been provided in the ES.
Chapter 20: Major Accidents and Disasters	The Inspectorate	An assessment of the potential significant effects of meteorological hazards should be conducted.	Risk events concerning extreme meteorological conditions have been considered at the long list stage. The Proposed Development will be designed in accordance with appropriate engineering standards to mitigate against meteorological

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			<p>impact. Operating and Emergency Strategies and Procedures will be developed to ensure, as far as reasonably Chapter 20: Major Accidents and Disasters practicable, that the event will not escalate resulting in further environmental impact. Further information has been included in the ES.</p>
Chapter 20: Major Accidents and Disasters	The Inspectorate	Earthquakes and ground stability may be scoped out.	This matter has been scoped out.
Chapter 20: Major Accidents and Disasters	The Inspectorate	Poor air quality in operational phase may be scoped out of MA&D as accidental release of toxic and / or asphyxiant gas is separately scoped in.	Poor air quality has been scoped out. Release of toxic and asphyxiant gases has been scoped in.
Chapter 20: Major Accidents and Disasters	The Inspectorate	Wildfires may be scoped out.	This matter has been scoped out.
Chapter 20: Major Accidents and Disasters	The Inspectorate	Malicious attack may be scoped out.	This matter has been scoped out.
Chapter 20: Major Accidents and Disasters	The Inspectorate	A summary of consents and licences required, the aspects they cover and the application status should be included within the ES and mitigation measures should be clearly described, including how they will be secured	The site is anticipated to be an Upper Tier COMAH installation and as such require COMAH notification. Further

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		and where this is through the Other Consents and Licences document submitted with the DCO application.	details on these and other consents, licences and mitigation measures identified has been provided in the ES in the Other Consents and Licences Statement (EN070009/APP/5.7).
Chapter 20: Major Accidents and Disasters	The Inspectorate	Construction hazards to waterways and rail should be assessed, where significant effects are likely to occur.	No construction hazards to the waterways are anticipated. The pipelines will pass under existing rail lines and Horizontal Directional Drilling (HDD), a Planning Inspectorate trenchless construction methodology, is proposed at these locations. Discussions are ongoing with the asset protection team at Network Rail regarding agreement on wayleaves and other mitigation measures.
Chapter 20: Major Accidents and Disasters	The Inspectorate	Hazards to and from nuclear facilities (Hartlepool Power Station) should be assessed, where significant effects are likely to occur.	Risk events concerning nuclear facilities have been considered at the long list stage. The Proposed Development is not likely to be directly affected in the case of a nuclear release from Hartlepool Power Station. Process equipment and instrumentation will be designed

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			to fail to a safe condition in the event of an evacuation order.
Chapter 20: Major Accidents and Disasters	The Inspectorate	The Health and Safety Executive and other relevant consultation bodies should be consulted to agree the scope and methodology of assessment.	<p>The Applicant has been meeting regularly with the HSE and has presented the following information to them:</p> <ul style="list-style-type: none"> • A general introduction to the Proposed Development; • A session on the approach to compliance with the PSR; and • A session focussed on the COMAH Regulations <p>In addition, the Applicant has been collaborating with the HSE on updated consequence modelling which the HSE will advocate as best practice, and demonstrate ALARP. Feedback received by the Applicant from the HSE is that the current approach to engagement is correct and has been helpful in advancing regulation of the energy transition</p>
Chapter 21: Materials and Waste	The Inspectorate	The following can be scoped out of the materials and waste assessment:	Noted

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		<ul style="list-style-type: none"> • Waste arising from extraction, processing and manufacture of construction components and products. • Environmental impacts associated with the management of waste (adequate cross referencing is to be made to where it is addressed elsewhere in the ES). • Effects associated with decommissioning (providing the commitment to producing a Decommissioning Environmental Management Plan (DEMP) is secured within the dDCO. • Operation – changes in availability of materials <p>Effects on MSAs (gypsum (anhydrite))</p>	
Chapter 21: Materials and Waste	The Inspectorate	Effects on MSAs (salt) should be assessed. Potential impacts on sterilisation of salt resource should be assessed within the Socio-economics and Land-use ES Chapter or further information should be presented to demonstrate that significant effects are not likely to occur.	Direct impacts on MSAs have been considered in Chapter 18: Socio-economics and land use (ES Volume I, EN070009/APP/6.2). The Proposed Development Site lies within MSAs for salt and gypsum (anhydrite), however, impacts on MSAs are not assessed in the materials and waste assessment (Chapter 21: Materials and Waste ES Volume I, EN070009/APP/6.2) in accordance with the IEMA Guidance (IEMA, 2020). MSAs are included for context in the baseline of Chapter 21: Materials and Waste (ES Volume I, EN070009/APP/6.2) since MSAs are a

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			<p>planning consideration and are considered further in the Planning Statement (EN070009/APP/5.2) submitted with the Development Consent Order (DCO) Application. The Proposed Development uses previously developed industrial land and where possible the Connection Corridors including the pipeline routes have been selected to avoid environmentally sensitive areas and utilise existing, established pipeline routes. The Proposed Development is unlikely to sterilise or prejudice the future extraction of the mineral resource, as the anhydrite and salt resources occur at depth and can be extracted by alternative means (e.g. mining or brine solution). Part of the anhydrite has already been removed by mining by Imperial Chemical Industries (ICI) prior to the 1970s (Mindat, 2023). Gypsum (anhydrite) is scoped out of the assessment as agreed by the Inspectorate which is</p>

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			outlined in the Consultation Report (EN070009/APP/5.1).
Chapter 21: Materials and Waste	The Inspectorate	Reuse of the made ground on this development is unlikely to be suitable for use under the CL:AIRE Definition of Waste Code of Practice (DoW CoP).	Noted.
Chapter 22: Human Health	The Inspectorate	If significant effects are likely to arise from the requirement to temporarily accommodate construction workers, then the ES should also consider the effects on human health from reduced housing availability and increased housing costs.	The effect of temporary accommodation for construction workers has been considered under the 'housing' determinant of this assessment. Significant effects are not likely; with further details reported in the ES.
Chapter 22: Human Health	The Inspectorate	Potential health impacts, hazards and public health receptors surrounding private drinking water supplies during the construction phase, including the potential for contamination or disruption, should be scoped into further assessment work and reported upon within the human health chapter of the ES, where significant effects are likely.	As noted in Chapter 9: Surface Water, Flood Risk, and Water Resources (ES Volume I, EN070009/APP/6.2), the Proposed Development Study Area is not within a Drinking Water Protected Area or Drinking Water Safeguard Zone. In addition, Chapter 9 finds that there is one private water supply (PWS) located near to the Proposed Development at Barnaby Side Farm in Redcar and Cleveland district. Following assessment of likely effects,

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			it is found that there are no significant effects expected to this PWS.
Chapter 22: Human Health	The Inspectorate	Effects on mental health, including the potential for local public concern through understanding of risk/ risk perception for local communities and for the wider public in respect of the proposed hydrogen pipeline should be assessed and reported upon within the ES, where significant effects are likely.	<p>IEMA guidance suggests the 'radiation' assessment should <i>"consider the mental health effects of widespread concerns about exposure from major electrical infrastructure or radiation sources.</i></p> <p>Therefore, the assessment of impacts on mental health is considered under the 'radiation' determinant. Impacts have the potential to be Minor Adverse, which is Not Significant. This has been reported in the ES. Mitigation is provided in the Framework CEMP (EN070009/APP/5.12) being increased awareness raising activities within the local community.</p>
Chapter 22: Human Health	The Inspectorate	The Scoping Report seeks to scope out a standalone assessment of EMF on the basis that these will be considered in the human health assessment.	EMF impacts to human health are assessed under the 'radiation' determinant. Impacts have the potential to be Minor Adverse, which is not Significant. This has been reported the ES.

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Chapter 23: Cumulative and Combined Effects	The Inspectorate	<p>The inspectorate concluded that the Proposed Development is unlikely to have a significant effect alone or cumulatively on the environment in a European Economic Area State, and that detailed transboundary screening is not warranted.</p> <p>The inspectorate directs the applicant's attention to Table 2 in the The Inspectorate's Advice Note 17 which sets out the expected approach to identifying projects to be included in a cumulative impact assessment. This approach includes projects wider than those with extant planning permission.</p> <p>The inspectorate outlines that for the revision of the long and short lists of projects to be included in the assessment, the ES should identify a "cut-off" date with respect to this so that the currency of it can be understood.</p> <p>The inspectorate noted that no justification was provided for the projects that were identified on Figure 15, stating that the ES should explain the reasoning behind the study area and the relationship with that which have informed the aspect chapters.</p>	<p>The methodology for the assessment of cumulative effects, in line with relevant guidance, is outlined in Chapter 23: Cumulative and Combined Effects (ES Volume I, EN070009/APP/6.2).</p> <p>The long list of other developments to be considered in Chapter 23: Cumulative and Combined Effects (ES Volume I, EN070009/APP/6.2) and includes projects wider than those with extant planning permission, as per the Inspectorate's Advice Note 17 (The Inspectorate, 2019a).</p> <p>An appropriate cut-off date for the revision of the long and short lists has been outlined in the ES.</p> <p>The Zols for each environmental topic have been included within Chapter 23: Cumulative and Combined Effects (ES Volume I, EN070009/APP/6.2), based on the largest study area identified for each environmental topic. Each Zol is indicative and will be subject to further review as the individual assessments progress,</p>

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			based on professional judgement. The search area for ‘other developments’ is equal to the largest Zol for an environmental topic, in accordance with Advice Note Seventeen (The Inspectorate, 2019a).
	Natural England	Natural England acknowledges the applicant’s description of projects needing to be assessed for cumulative and in combination effects alongside the proposal. They state that they are not aware of additional projects needing assessment.	Noted.
Chapter 23: Cumulative and Combined Effects	Lichfields on behalf of South Tees Developments Limited (STDL)	Lichfields note that the projects identified within Teesworks land are correct but that the commentary in respect of the applications / permissions is not. Lichfield further wish to engage with H2Teesside to ensure the list of cumulative schemes is kept up to date, that the scope of the cumulative assessment is appropriate, and to ensure that the development proposed on Teesworks is assessed accurately.	The long and short list of developments have been updated and reviewed until an appropriate cut-off date defined in the ES, with the status of applications being updated as required. The STDL applications referenced by Lichfields and included within in Chapter 23: Cumulative and Combined Effects (ES Volume I, EN070009/APP/6.2) have been checked on the RCBC website to ensure they show the correct status and commentary.