

# LIGHTHOUSE GREEN FUELS PROJECT

## Preliminary Environmental Information Report

### Chapter 3: Approach to EIA

The Inspectorate Reference: EN010150

May 2024

Volume 1

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## **3. APPROACH TO EIA**

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### **3.1. INTRODUCTION**

- 3.1.1. This Chapter sets out the overall approach to the EIA for the Proposed Scheme. A detailed overview of the methodology adopted for each environmental topic is provided within the respective Chapters of this report. The approach to the assessment has been informed by current best practice guidance, as set out within the Planning Inspectorate (The Inspectorate) Advice Note Seven<sup>1</sup>.
- 3.1.2. This PEIR contains the information specified in Regulation of 14(2)(a)-(f), 14(4)(a) and Schedule 4 to the EIA Regulations<sup>2</sup> as set out in **Table 1-1 of Chapter 1: Introduction (Volume 1)**.

### **3.2. RELEVANT EXPERIENCE**

- 3.2.1. In line with Regulation 14(4)(a) of the EIA Regulations, this PEIR has been prepared by a suitably qualified project team. The ES will provide further details of the competent Project Team, with associated roles and expertise.
- 3.2.2. The Institute of Environmental Management and Assessment (IEMA) has awarded WSP the EIA Quality Mark<sup>3</sup> in recognition of WSP's commitment to excellence in EIA activities. WSP have continued to maintain this following annual examination in relation to their products, staff, innovation, and promotion of EIA practice within the industry. Furthermore, each Technical Chapter of this PEIR has been prepared by an individual suitably qualified expert with regard to each technical topic.

### **3.3. STRUCTURE OF THIS PEIR**

- 3.3.1. This PEIR consists of three volumes:
- Volume 1: Main Text;
  - Volume 2: Figures; and
  - Volume 3: Technical Appendices.
- 3.3.2. The Chapters of this PEIR are numbered as follows:
- Chapter 1 – Introduction;
  - Chapter 2 – Site and Proposed Scheme Description;
  - Chapter 3 – Approach to EIA;
  - Chapter 4 – Energy and Planning Policy;
  - Chapter 5 – Air Quality;
  - Chapter 6 – Noise and Vibration;
  - Chapter 7 – Terrestrial Ecology;
  - Chapter 8 – Freshwater and Marine Ecology;
  - Chapter 9 – Water Environment and Flood Risk;
  - Chapter 10 – Landscape and Visual;

- Chapter 11 – Greenhouse Gases;
- Chapter 12 – Climate Change Resilience;
- Chapter 13 – Materials and Waste;
- Chapter 14 – Socioeconomics;
- Chapter 15 – Population and Human Health;
- Chapter 16 – Traffic and Transport;
- Chapter 17 – Major Accidents and Disasters;
- Chapter 18 – Marine Navigation;
- Chapter 19 – Cumulative Effects; and
- Chapter 20 – Summary of Likely Significant Effects.

3.3.3. The anticipated structure of the ES is outlined in **Section 3.13**.

## 3.4. CONSULTATION

3.4.1. This PEIR forms part of the current, statutory consultation being undertaken, as required by the Planning Act 2008 and the EIA Regulations and has been prepared to help consultees to develop an informed view of the likely significant effects of the Proposed Scheme and an opportunity to provide feedback to the Applicant.

3.4.2. Further details about all the consultation undertaken for the Proposed Scheme will be provided in the Statement of Community Consultation (SoCC) and Consultation Report, which will be submitted as part of the DCO application.

## 3.5. INFORMAL CONSULTATION

3.5.1. As part of the EIA process, technical and procedural consultation is ongoing with both statutory and non-statutory bodies with the purpose being to brief consultees on the Proposed Scheme, seek feedback on the proposed approach to the assessment and proposed mitigation. It is also an opportunity to obtain baseline data, for example mapping of Public Rights of Way (PRoW).

3.5.2. A summary of consultation undertaken to date for each topic is included in **Chapter 5: Air Quality (Volume 1)** to **Chapter 19: Cumulative Effects (Volume 1)** of this PEIR.

## 3.6. EIA SCOPING OPINION

3.6.1. An EIA Scoping Request was submitted by the Applicant to the Planning Inspectorate on 24 July 2023 under Regulation 10 of the EIA Regulations which sets out the proposed scope of matters to be considered in the ES. An EIA Scoping Opinion<sup>4</sup> was received by the Applicant from the Planning Inspectorate on behalf of the Secretary of State on 01 September 2023.

3.6.2. A list of the consultees contacted by the Planning Inspectorate as part of the EIA Scoping process is provided within Appendix 1 of the EIA Scoping Opinion<sup>4</sup>. The following consultees provided a response to the Planning Inspectorate:

- Anglian Water;

- Darlington Borough Council;
- Environment Agency;
- Hartlepool Borough Council;
- Historic England;
- Marine Management Organisation;
- Maritime and Coastguard Agency;
- Middlesbrough Development Corporation;
- National Gas Transmission;
- National Grid Electricity Transmission (NGET);
- NATS En-Route Safeguarding;
- Natural England;
- Network Rail;
- Royal Mail;
- Stockton On Tees Borough Council;
- Trinity House; and
- UK Health Security Agency.

3.6.3. In addition to the above, the following bodies responded separately:

- National Gas Transmission; and
- South Tees Development Corporation.

3.6.4. As a result of the findings at the EIA Scoping Stage the following topics were scoped out of further assessment. As a result, these are not represented in separate Technical Chapters in this PEIR and will not be assessed as part of the ES:

- Cultural Heritage; and
- Geology and Soils.

3.6.5. The responses from the Planning Inspectorate (the Inspectorate) in relation to the introductory Chapters of the EIA Scoping Report<sup>5</sup> (Chapter 2: Site and Proposed Scheme Description and Chapter 3: Approach to EIA) and scoped out topics (Chapter 11: Cultural Heritage and Chapter 17: Geology and Soils) and how these requirements have or will be addressed by the Applicant, are set out in **Table 3-1** below.

3.6.6. Responses to the Planning Inspectorate's comments on the scoped in topics are set out in each Technical Chapter.

3.6.7. The following Technical Notes have also been provided in **Volume 3** which provide detailed responses to specific comments from the Planning Inspectorate on Cultural Heritage and Geology and Soils identified in **Table 3-1**:

- **Appendix 3B: Cultural Heritage Technical Note (Volume 3)**; and
- **Appendix 3C: Geology and Soils Technical Note (Volume 3)**.

**Table 3-1: Response to the EIA Scoping Opinion in Relation to the Introductory Chapters of the EIA Scoping Report**

Section ID	Description	Scoping Opinion Comments	Response
2.1.1	Off-gases	<p><i>“It is stated that the Fischer-Tropsch (FT) process produces “off-gases”. The term off-gases is not defined within the Glossary and specific by-products of the FT process are not described. Although Table 5-3 provides a list of the metals and trace elements likely to be produced via the FT process, and Table 5-7 lists the likely significant air quality effects per component of the Sustainable Aviation Fuel (SAF) plant, there is no reference to off-gases.</i></p> <p><i>The ES should fully describe the FT process and any associated by-products, as well as any measures which are proposed to control these. Where significant effects are likely to occur from the production and combustion of off-gases, such as impacts on air quality, this should be appropriately assessed.”</i></p>	<p><b>Chapter 2: Site and Proposed Scheme Description (Volume 1)</b> and <b>Chapter 5: Air Quality (Volume 1)</b> describes the FT process and any associated by-products, as well as any measures which are proposed to control these. This information will be developed further in the ES and full assessments of the production and combustion of off-gases will be included in the relevant technical assessments.</p> <p>The term off-gases has been added to the glossary.</p>
2.1.2	Flares	<p><i>“The Proposed Development includes multiple flares, up to 130m in height. It is understood (from the wording in Paragraph 2.2.29) that multiple flares will be required for the operation of the Proposed Development whilst two additional flares are required for the SAF production process but only for “emergency or abnormal operational scenarios”. It is unclear what would constitute an emergency or abnormal scenario and the frequency these are likely to occur.</i></p> <p><i>The ES should clarify the types of gases to be flared and the frequency of use of the flares and ensure that this is reflected in any assessments of likely significant effects.</i></p>	<p>The Proposed Scheme Description of the ES will clarify the types of gases to be flared and the frequency of use of the flares. Indicative examples of emergency or abnormal operational scenarios are provided in <b>Chapter 2: Site and Proposed Scheme Description</b>. The impacts and effects of these gases and their frequency of use will also be reflected in the air quality assessment within the ES.</p>

Section ID	Description	Scoping Opinion Comments	Response
2.1.3	Column / stack height	<i>Various figures for the heights of the columns/ stacks in Table 2-1 are provided as approximate values – the ES should give the maximum heights for these structures. “</i>	<b>Chapter 2: Site and Proposed Scheme Description (Volume 1)</b> states the maximum height of the largest flare stack in <b>Table 2-1</b> . Additional parameters, including the maximum height of structures, columns and other stacks, will be provided in the ES.
2.1.4	Miscellaneous tankage	<i>“The ES should clarify the proposed number of storage tanks and whether the parameters in Table 2-1 are for each tank or the totality of the storage facility.”</i>	The numbers of storage tanks and additional individual parameters for these tanks, will be provided as part of the Proposed Scheme description in the ES.
2.1.5	Flood Zones	<i>“The sketching of the Flood Zone mapping is unclear and indicates that the areas of the Site are located within both Flood Zones 2 and 3. The ES should use a clear legend to facilitate interpretation of this figure. The ES should also differentiate between Flood Zones 3a and 3b.”</i>	<b>Figure 9-4 (Volume 2)</b> shows the areas of the Proposed Scheme that fall within either Flood Zone 2 and 3. It also includes the delineation between Flood Zones 3a and 3b.
2.1.6	Project components	<i>“Paragraph 2.2.5 lists the components of the Proposed Development however it is stated that this list is “not exhaustive”. The ES should describe all components of the Proposed Development and ensure the description is consistent with that provided within the Development Consent Order (DCO).”</i>	<b>Chapter 2: Site and Proposed Scheme Description (Volume 1) Paragraph 2.2.6</b> provides a list of all components of the Proposed Scheme supported by <b>Figures 1-2</b> and <b>Figure 2-1 (Volume 2)</b> . These descriptions will be further developed to ensure that the ES provides a list of key items.
2.1.7	Process diagram	<i>“Figure 2-3 provides a helpful flow chart of the SAF process. The Inspectorate suggests that this is enhanced to include a full suite of inputs and outputs to the various processes to provide further clarity.”</i>	<b>Figure 2-3 (Volume 2)</b> has been further developed to explain the SAF process. As the design process continues, this figure will continue to be refined and

Section ID	Description	Scoping Opinion Comments	Response
			updated ahead of the submission of the ES.
2.1.8	Bulk liquid storage	<i>“The Scoping Report<sup>5</sup> anticipates that the final products will be stored in large scale bulk liquid storage tanks on a neighbouring tank farm to the east of the Site, and then be transferred to an offsite storage facility via pipelines. Figure 2-1 does not indicate the location of these storage facilities; this should be clearly presented in the ES.”</i>	<b>Figure 1-2 (Volume 2)</b> shows the location of bulk liquid storage tanks. As the design develops and is refined, additional locational detail will be provided and included in the submission of the ES.
2.1.9	Marine transportation	<i>“The Scoping Report<sup>5</sup> states that there are two options regarding the transportation via marine vessels, using either Wilton Engineering Wharf or Clarence Wharf. It is stated in Paragraph 2.2.38 that these options are currently being explored and the preferred option(s) will be confirmed within the ES. The ES should describe the main reasons for the option chosen and explain how the environmental effects have influenced the choice of option. The environmental effects considered should include any impacts to the marine environment, such as from additional piles and reinforcement required to utilise Clarence Wharf (as stated in Table 2-2).”</i>	The Applicant is currently undertaking logistics studies to determine the feasibility of several marine transport options. These studies have not been completed at the time of this PEIR’s preparation. These will be discussed as part of the assessment of alternatives, included in the ES. As a result, the ES will include and assess all options in the relevant technical assessment. These options are described in this PEIR in <b>Chapter 2: Site and Proposed Scheme Description (Volume 1)</b> .
2.1.10	Offsite facilities	<i>“The Scoping Report<sup>5</sup> states that an offsite temporary construction worker site may be required but a location has not yet been identified. The temporary worker site will be converted into permanent offsite parking facilities for employees/contractors. This should be included in the DCO Application Boundary, and any potentially significant effects should be assessed within the ES.”</i>	<b>Chapter 2: Site and Proposed Scheme Description (Volume 1) and Figure 1-2 (Volume 2)</b> provide the current level of available detail on the location of construction compounds within the Site. At present no offsite logistics facility (road logistics hub or

Section ID	Description	Scoping Opinion Comments	Response
			worker park and ride) have been identified.
2.1.11	Water supply	<p><i>“Table 19-4 states that “a small amount of water would be required during construction and a constant supply will be required during operation”. Limited information is provided regarding the need for water supply during operation although Paragraph 2.2.27 highlights that utility pipelines for raw and potable water are required.</i></p> <p><i>The ES should explain the need for a water supply within operation and provide estimates of the quantity of water required during construction and operation. The ES should also clarify where this water is proposed to be abstracted from and assess the implications of this for regional, national, and local water supply. It is also noted within Table 19-4 that during an event of water scarcity additional supplies could be transported via tanker. The ES should ensure that this scenario is assessed where relevant. The Applicant’s attention is drawn to the consultation response from the Environment Agency (Appendix 2 of this Opinion) regarding the impacts of cooling water.”</i></p>	<p><b>Chapter 2: Site and Proposed Scheme Description (Volume 1) Section 2.4</b>, provides a description of the proposed water usage and sources for both the Construction and Operation phases. As the design process continues this detail will be updated and included in the ES.</p>
2.2.1	Scope and Scoping Table	<p><i>“Paragraph 1.5.2 states that where further evidence justifies a change in the scope of the EIA this will be explained in the ES along with confirmation of whether this was agreed with relevant consultees.</i></p> <p><i>The Applicant’s attention is drawn to Paragraph 1.0.4 of this Opinion which states that matters may be subsequently scoped out if further evidence has been provided to justify this approach. It is advised that any subsequent refinement of scope should be agreed with relevant consultation bodies in writing, with evidence and a clear justification submitted as part of the ES.</i></p>	<p>The ES will outline the changes in design information between the EIA Scoping Stage and the ES and the subsequent justification for the scoping in or out of elements for full assessment in the ES. A summary of these, where relevant, will be provided at the start of respective Technical Chapters and relevant front end ES Chapters. In addition, where relevant, this PEIR includes such information in <b>Chapter 5:</b></p>

Section ID	Description	Scoping Opinion Comments	Response
		<i>The Inspectorate advises the use of a table to set out the key changes in parameters/options of the Proposed Development presented in the Scoping Report<sup>5</sup> to that presented in the ES. It is also advised that a table demonstrating how the matters raised in the Scoping Opinion<sup>4</sup> have been addressed in the ES and/or associated documents is provided.</i>	<b>Air Quality (Volume 1) to Chapter 19: Cumulative Effects (Volume 1)</b> outlining changes made between EIA Scoping and this PEIR or changes anticipated at the ES.
2.2.2	Input waste material	<i>“Paragraph 2.2.11 states that raw input waste material will be delivered to the neighbouring, existing, and operational Materials Recycling Facility (MRF). It is unclear whether these deliveries are intended to be considered as part of the operational parameters of the Proposed Development. The Inspectorate considers that should additional journeys (whatever the mode of transport) be made to supply the Proposed Development with inputs, then these journeys should be used to inform the ES and be considered in the assessment of operational traffic and associated effects.”</i>	<b>Chapter 2: Site and Proposed Scheme Description (Volume 1) and Chapter 16: Traffic and Transport (Volume 1)</b> outline design details available for this PEIR in regard to these deliveries. These deliveries are considered as part of the Proposed Scheme and will be fully assessed as part of the ES and the Transport Assessment.
2.2.3	Feedstock	<i>“Paragraph 2.2.11 states that the feedstock comprises pelletized solid recovered fuel (SRF) as well as additional waste biomass. The ES should provide further detail on the specific waste feedstock.”</i>	<b>Chapter 2: Site and Proposed Scheme Description (Volume 2), Section 2.2.15</b> provides a description of the proposed feedstock (described as Biocarbon Feedstock) for the SAF plant which will include waste and/or waste biomass. The ES will include a similar description.
2.2.4	The Net Zero Teesside Project	<i>“The Proposed Development proposes to connect to the Net Zero Teesside project (NZE). It is stated that it would be preferable for the Proposed Development to be connected to NZE from the start of operation. However, an alternative scenario of a delay of up to 5 years from the</i>	<b>Chapter 3: Approach to EIA (Volume 1)</b> outlines the basis of assessment regarding the export of CO <sub>2</sub> should the NZE not progress or be delayed. <b>Chapter 11: Greenhouse Gases</b>

Section ID	Description	Scoping Opinion Comments	Response
		<p><i>Proposed Development operational phase to the connection with NZT is assumed as a worst-case scenario to factor in start-up delays on NZT. The ES should explain why 5 years is considered a reasonable worst-case scenario regarding start-up delay.</i></p> <p><i>It is unclear what is proposed for the CO<sub>2</sub> emissions for this five-year period should there be delays to NZT. Furthermore, should NZT not gain development consent it is unclear what would happen to the produced CO<sub>2</sub>.</i></p> <p><i>The ES should consider multiple options where there is uncertainty, particularly within the assessment of greenhouse gases. The ES should also assess the potential for cumulative effects with NZT, as well as other projects.”</i></p>	<p><b>(Volume 1)</b> of this PEIR details the approach to the assessment of CO<sub>2</sub> emissions depending on these described options regarding NZT. The ES assessment of GHGs will provide a full assessment of an operational NZT scenario, an assumed delayed NZT scenario and other scenarios once identified.</p>
2.2.5	Site preparation works	<p><i>“The Scoping Report<sup>5</sup> notes that some site preparation works are being undertaken, anticipated to last from April 2023 to April 2024. The Report states that these would not be consented under the DCO but would be taken account of if required within the cumulative assessment. Given that the works are expected to be completed by April 2024, the Inspectorate is unclear how these works would interact with the Proposed Development and suggests it would be more appropriate to consider the site clearance as part of the future baseline.”</i></p>	<p>An updated demolition and construction timeline has been presented in <b>Chapter 2: Project Description (Volume 1)</b>. The partial demolition of TV1 and TV2 is expected to be undertaken in 2024.</p>

Section ID	Description	Scoping Opinion Comments	Response
2.2.6	Assessment of heat and radiation	<p><i>“The Applicant proposes to scope out an assessment of heat and radiation as no significant sources of such emissions are anticipated.</i></p> <p><i>The Inspectorate is content that emissions of heat and radiation are likely to be minimal based on the characteristics of the Proposed Development, particularly as heat recovery steam generators are proposed. This matter can therefore be scoped out. However, in line with Schedule 4 of the EIA Regulations the ES should include an estimate by type and quantity of expected emissions including heat, radiation, and light emissions.”</i></p>	Where relevant, such information on types and quantities of emissions of heat, radiation and light will be provided in the ES assessments of Greenhouse Gases and Landscape and Visual (for more information see <b>Chapter 11: Greenhouse Gases (Volume 1)</b> and <b>Chapter 10: Landscape and Visual (Volume 1)</b> ).
2.2.7	Assessment of light emissions	<p><i>“It is unclear from the wording within this Paragraph whether an assessment of light emissions is proposed to be scoped out or not. Elsewhere the Scoping Report<sup>5</sup> identifies construction and operational light spill as a potential impact on terrestrial and aquatic ecological receptors.</i></p> <p><i>For the avoidance of doubt in the absence of a detailed lighting strategy for either construction or operation the Inspectorate is not content to scope this matter out at this stage. The ES should describe the proposed lighting strategy, provide estimates of the expected light emissions, and assess the likely significant effects where these are likely to occur (such as on ecological receptors).”</i></p>	The ES assessments of Terrestrial Ecology, Freshwater and Marine Ecology and Landscape and Visual Effects will consider the effects of lighting as they relate to specific sensitive receptors. Further details on the approach to these assessments for both this PEIR and ES can be found in <b>Chapter 7: Terrestrial Ecology (Volume 1)</b> , <b>Chapter 8: Freshwater and Marine Ecology (Volume 1)</b> and <b>Chapter 10: Landscape and Visual (Volume 1)</b> of this PEIR.
2.2.8	Decommissioning phase	<p><i>“Several of the aspect Chapters of the Scoping Report<sup>5</sup> do not refer to the decommissioning phase. The ES should assess the potential for likely significant effects for all stages of the Proposed Development (construction,</i></p>	The approach to the assessment of the decommissioning phase is clarified in the respective Technical Chapters in this PEIR ( <b>Chapter 5: Air Quality (Volume</b>

Section ID	Description	Scoping Opinion Comments	Response
		<i>operation, and decommissioning) or provide sufficient justification for why this is not required in relation to the absence of likely significant effects.”</i>	<b>1) to Chapter 19: Cumulative Effects (Volume 1)).</b>
2.2.9	Deemed Marine Licence	<i>“The adjacent River Tees is noted to be a tidal river at the point where it passes the Proposed Development Site Boundary. The Proposed Development may require a Deemed Marine Licence as part of the DCO. The Applicant is advised to engage with the Marine Management Organisation (MMO) regarding marine licensing, although it is noted in Paragraph 3.2.1 of the Scoping Report<sup>5</sup> that consultation with the MMO is proposed. The Applicant’s attention is drawn to the consultation response from the MMO in this regard (Appendix 2 of this Opinion).”</i>	<b>Chapter 9: Water Environment and Flood Risk (Volume 1)</b> of the ES will detail updates on the status of consultation with the MMO in regard to Marine Licencing. If a Deemed Marine Licence (DML) is required, it will form part of the DCO.
2.2.10	Transboundary	<i>“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 extent, magnitude, probability, duration, frequency and reversibility of the impacts. 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.</i>	No response required.

Section ID	Description	Scoping Opinion Comments	Response
		<p><i>Note: The SoS' duty under Regulation 32 of the 2017 EIA Regulations continues throughout the application process. 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 <a href="http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/">http://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/</a> “</i></p>	
<p>Natural England, Page 2.</p>	<p>General Principles</p>	<p><i>“Through ongoing discussions with the Applicant and a review of the Lighthouse Green Fuels Environmental DCO: Impact Assessment Scoping Report<sup>5</sup> (July 2023) Natural England is confident that the general principles (set out below) will be addressed through the ES.</i></p> <p><i>i. Regulation 11 of the Infrastructure Planning Regulations 2017 - (The EIA Regulations) sets out the information that should be included in an Environmental Statement (ES) to assess impacts on the natural environment. This includes:</i></p> <p><i>ii. A description of the development – including physical characteristics and the full land use requirements of the Site during construction and operational phases</i></p> <p><i>iii. Appropriately scaled and referenced plans which clearly show the information and features associated with the development</i></p> <p><i>iv. An assessment of alternatives and clear reasoning as to why the preferred option has been chosen</i></p> <p><i>v. A description of the aspects and matters requested to be scoped out of further assessment with adequate justification provided<sup>1</sup>.</i></p>	<p>No response required.</p>

Section ID	Description	Scoping Opinion Comments	Response
		<p><i>vi. Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation etc.) resulting from the operation of the Proposed Development</i></p> <p><i>vii. A description of the aspects of the environment likely to be significantly affected by the development including biodiversity (for example fauna and flora), land, including land take, soil, water, air, climate (for example greenhouse gas emissions, impacts relevant to adaptation, cultural heritage and landscape and the interrelationship between the above factors</i></p> <p><i>viii. A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium, and long term, permanent and temporary, beneficial, and adverse effects. Effects should relate to the existence of the development, the use of natural resources (in particular land, soil, water and biodiversity) and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment</i></p> <p><i>ix. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment</i></p> <p><i>x. An outline of the structure of the proposed ES”</i></p>	
National Grid, Page 3, Further Advice	National Grid assets	<p><i>“We would request that the potential impact of the Proposed Scheme on NGET’s existing assets as set out above and including any proposed diversions is considered in any subsequent reports, including in the Environmental Statement, and as part of any subsequent application.”</i></p>	<p>Potential effects on all identified assets are assessed as part of <b>Chapter 17: Major Accidents &amp; Disasters (Volume 1)</b> in addition to any protective provisions, if necessary, which would be secured via the DCO.</p>

Section ID	Description	Scoping Opinion Comments	Response
3.7 Cultural Heritage 3.7.1	Buried heritage assets	<p><i>“The Applicant proposes to scope out impacts from construction on buried heritage assets on the basis that any buried assets within the Site would have already been significantly truncated or entirely removed by previous development. It is noted (in paragraph 11.2.2) that the Site was previously considered to have low archaeological potential, and this was agreed by Stockton-on-Tees Borough Council.</i></p> <p><i>Paragraph 11.7.1 states that a CoCP will be implemented. This CoCP will include appropriate mitigation strategies including the monitoring of intrusive ground works by heritage specialists to identify any previously unrecorded heritage assets.</i></p> <p><i>In light of the above, the Inspectorate is content that this matter can be scoped out of further assessment.”</i></p>	No response required.
3.7.2	Designated and non-designated heritage assets outside of the Site – assets whose setting includes the Proposed Development Site	<p><i>“The Applicant proposes to scope out construction and operation impacts on heritage assets whose setting includes the Proposed Development Site (namely Grade II* listed Transporter Bridge (NHLE 1139267); Piers, railings and gates at the entrance of the Transporter Bridge (NHLE 1139846); Winch House, adjoining railings, wall, gates and gate piers c. 40m southwest of the Transporter Bridge (NHLE 1139847); and Bridgekeepers House (NHLE 1139848). The reasoning provided is that the Proposed Development is consistent with the industrial character of their setting and therefore significant effects are unlikely.</i></p> <p><i>The Scoping Report<sup>5</sup> states that the settings of these assets relate to the Transporter Bridge, built in the early twentieth century, and are considered “industrial in nature” (as stated in paragraph 11.8.2).</i></p>	<b>Appendix 3B: Cultural Heritage Scoping Opinion Technical Note (Volume 3)</b> details that there would not be any likely significant effects and the setting and heritage significance of the heritage assets listed would not be impacted by the Proposed Scheme. For the purposes of the ES, Cultural Heritage will remain scoped out. Further consultation activities are ongoing with both STBC and Historic England.

Section ID	Description	Scoping Opinion Comments	Response
		<p><i>Limited further information is provided regarding the settings of these assets, and it is unclear how the introduction of the Proposed Development as a modern industrial plant could interact with their heritage setting. On the basis of the information provided the Inspectorate does not agree to scope this matter out. The ES should assess the potential for the Proposed Development to impact on the setting of these heritage assets or demonstrate the absence of a likely significant effect with agreement from relevant consultation bodies.”</i></p>	
3.7.3	<p>Designated and non-designated heritage assets outside of the Site – assets whose setting does not include the Proposed Development Site</p>	<p><i>“The Applicant proposes to scope out assets within the Study Area whose settings do not include the Proposed Development Site (24 Grade II listed assets and the Grade II* listed Dock Clock Tower, as stated in paragraph 11.5.5) on the basis that no change within their settings is predicted as these do not include the Proposed Development Site. It is unclear whether the Havertown Hill and Port Clarence War Memorial is included within the Grade II listed assets however paragraph 11.8.3 also rules out significant effects on the basis that the Proposed Development Site is not included within its heritage setting. The Inspectorate is content that this matter may be scoped out of further assessment as significant effects are unlikely to occur based on the lack of connectivity between the Proposed Development Site and the heritage asset settings.”</i></p>	<p>No response required.</p>
3.7.4	<p>Decommissioning</p>	<p><i>“This Section of the Scoping Report<sup>5</sup> does not mention potential impacts during decommissioning. The ES should consider the potential for impacts to heritage assets from decommissioning works, particularly should the future</i></p>	<p><b>Appendix 3B: Cultural Heritage Scoping Opinion Technical Note (Volume 3)</b> details that decommissioning is not expected to</p>

Section ID	Description	Scoping Opinion Comments	Response
		<i>baseline change, and outline measures in place which would limit these, such as an outline Decommissioning Plan.”</i>	change from the existing baseline. This is because there is no impact to any buried heritage assets as it is located on land that has been significantly disturbed by previous industrial development.
Historic England Page 1	Cultural Heritage	<i>“In EIA terms this would not amount to a significant heritage impact but should heritage impacts be considered at a subsequent stage, the impact on the Transporter Bridge as landmark structure should be assessed.”</i>	<b>Appendix 3B: Cultural Heritage Scoping Opinion Technical Note (Volume 3)</b> provides further details on the likely effects on the setting and heritage significance of the heritage assets listed including the Transport Bridge. This confirms that these would not be impacted by the Proposed Scheme. For the purposes of the ES, Cultural Heritage will remain scoped out.
3.13.1	Mining	<i>“It is stated that the Site is not within a Coal Mining Reporting Area and therefore risks associated with coal mining are not considered further. However, paragraph 17.4.18 states that there are features located within the Site Boundary, such as two tunnels and mining cavities. Although the Inspectorate acknowledges that the Site is not located within a Coal Mining Reporting Area, these areas do not represent the full extent of geological coal reserves and resources and therefore there is some potential for the Proposed Development to impact on existing mining and/or natural features, particularly as these features have been identified within the Site Boundary. As such the ES should assess the potential for risks associated with mining, ground workings, and/or natural cavities to result in likely significant effects.”</i>	The Preliminary Environmental Risk Assessment (PERA) has identified one mining cavity within the Site Boundary as recorded in the Groundsure Report provided as Appendix B of Appendix 17A: Preliminary Environmental Risk Assessment of the EIA Scoping Report <sup>5</sup> . The mining cavity is noted to be associated with a Brine Well. It is proposed that further assessment of risk associated with the historical brine extraction wells is secured via the requirement for a geotechnical risk register to be completed at design stage. Further assessment of the

Section ID	Description	Scoping Opinion Comments	Response
			potential risks would be completed as the design progresses and risks mitigated via engineering design. This issue is addressed in further detail in <b>Appendix 3C: Geology &amp; Soils Technical Note (Volume 3)</b> .
3.13.2	Contaminated soil and detriment to human health – construction	<p><i>“The Applicant proposes to scope out impacts to human health from exposure to contaminated soil on the basis that this will be mitigated through risk assessment and method statements (RAMS) as standard practice during construction.</i></p> <p><i>The Inspectorate is content that this matter can be scoped out of further assessment. However, the ES should outline the mitigation measures in place and mechanism(s) by which these are secured.”</i></p>	It is considered that the assessment of risk associated with potential contamination sources and the potential risk to human health will be secured via the DCO conditions and the requirement for ground investigation and geo-environmental risk assessment. As detailed in <b>Appendix 3C: Geology &amp; Soils Technical Note (Volume 3)</b> , mitigation measures during construction will be secured in the Outline Code of Construction Practice (OCoCP) and will include as a minimum the requirement for the use of appropriate Personal Protective Equipment (PPE), working in accordance with site specific, task specific Risk Assessment Method Statement (RAMS) and if considered necessary following ground investigation the implementation of a remediation scheme.
3.13.3	Contaminated soil and detriment to human health – operation	<p><i>“It is proposed that a Remediation Strategy will be implemented during the construction phase which would eliminate the potential for impacts relating to exposure to contaminated soil to occur during operation.</i></p>	If required, the implementation of a remediation strategy and associated verification will be secured via the DCO conditions. The requirement for a

Section ID	Description	Scoping Opinion Comments	Response
		<p><i>The Inspectorate is content that this matter can be scoped out of further assessment for the operational phase. However, the ES should outline the measures in place within the Remediation Strategy and mechanism by which this is secured.</i></p>	<p>remediation strategy will be ascertained following the collation of site specific data as part of the ground investigation.</p> <p>The potential mitigation measures included within a remediation strategy are outlined in <b>Section 4 of Appendix 3C: Geology &amp; Soils Technical Note (Volume 3)</b>, These may be addressed either by design (particularly layout of e.g. hardstanding cover versus areas of soft cover) or remediation measures e.g. excavation of the contamination sources or installation of a cover system.</p>
3.13.4	Controlled water body contamination – construction	<p><i>“The Applicant proposes to scope out impacts on controlled water bodies (including Ramsar sites and SSSIs). It is stated that potential sources of contamination and understanding of the hydrogeological regime will be acquired through future site investigation and standard practice measures will be implemented during construction; these measures are outlined within paragraph 17.6.2 and are proposed to be included within the CoCP.</i></p> <p><i>Considering the dependence on mitigation measures, including as yet uncompleted further onsite investigation, the Inspectorate does not agree to scope out impacts arising through construction works. The ES should assess the potential for the Proposed Development to result in likely significant effects from the contamination of water bodies and/or describe any measures in place to reduce</i></p>	<p>It is anticipated that the requirement for ground investigation is inherent to progression of the Proposed Scheme and will be secured via the DCO conditions. As outlined within Chapter 17 of the Scoping Report<sup>5</sup>, the requirement for a detailed CoCP, which details the environmental management requirements to limit pollution of controlled waters during the Construction Phase, will be secured as part of the DCO requirements. In turn, the mitigation measures required to limit the potential for the contamination of controlled waters during construction will be secured in the production of a OCoCP for the Proposed Scheme.</p>

Section ID	Description	Scoping Opinion Comments	Response
		<p><i>the potential for likely significant effects and the mechanism by which this is secured.”</i></p>	<p>Environmental management requirements will be in line with standard construction practices and will include but not be limited to the following:</p> <ol style="list-style-type: none"> <li>1. Completion of a remediation scheme (if necessary) as identified following ground investigation.</li> <li>2. Completion of appropriate baseline groundwater and surface water monitoring prior, during and post completion of construction works.</li> <li>3. Ensuring soil arisings are appropriately managed on site in accordance with a MMP and any waste soils to follow the appropriate disposal route.</li> <li>4. Site housekeeping is optimised with, for example, the use of appropriately bunded fuel storage (no less than 110% bunded capacity), appropriate emergency spill procedures are in place, frequent tool box talks are provided to reiterate the importance of good environmental practices.</li> </ol>

Section ID	Description	Scoping Opinion Comments	Response
			This issue is addressed in further detail in <b>Appendix 3C: Geology &amp; Soils Technical Note (Volume 3)</b> .
3.13.5	Controlled water body contamination – operation	<i>“The Applicant proposes to scope out impacts on controlled water bodies during operation on the basis that the Proposed Development would operate in accordance with the environmental permitting requirements. The Inspectorate is content with this approach and therefore is content to scope this matter out for the operational phase.”</i>	No response required
3.13.6	Hazardous ground gas to accumulate within confined spaces	<i>“The Applicant proposes to scope out impacts resulting from the accumulation of hazardous ground gas within confined spaces. It is stated that this will be assessed during future ground investigation and mitigated through standard construction practices in accordance with the CoCP and RAMS as well as “the implementation of good design”.</i> <i>It is stated that if confined spaces or other areas where gas could accumulate are included in the Proposed Development construction of these would “include gas protection measures where necessary”. No further detail is provided on these measures.</i> <i>In the absence of further information including the specific measures relied upon the Inspectorate is not in a position to scope this matter out at this stage. The ES should assess the potential for the Proposed Development to result in likely significant effects from the accumulation of gas in confined spaces and/or describe any measures in place to reduce the potential for likely significant effects and the mechanism by which this is secured.”</i>	It is anticipated that the requirement for ground investigation is inherent to progression of the Proposed Scheme and will be secured via the DCO. The requirement for the assessment of a ground gas risk assessment to assess would be completed as part of a ground investigation. As outlined in <b>Section 4 of Appendix 3C: Geology &amp; Soils Technical Note (Volume 3)</b> , the mitigation of potential risks from ground gas would be assessed as part of both the design process and the implementation of a remediation scheme, if required. Implementation of a remediation scheme in relation to ground gas would be secured via a DCO requirement and is likely to include passive measures such as installation of a gas protection membrane or dependant on the level of risk,

Section ID	Description	Scoping Opinion Comments	Response
			installation of active protection such as incorporation of venting systems.
3.13.7	Built environment – construction	<i>“The Applicant proposes to scope out impacts to the built environment (namely pipes and cables) from aggressive ground contaminants. This is proposed to be scoped out of the construction phase due to there being insufficient time for contaminants to impact structures. The Inspectorate agrees that significant effects are unlikely to occur in relation to this impact during the construction period and therefore this matter can be scoped out.”</i>	No response required
3.13.8	Built environment – operation	<i>The Applicant proposes to scope this matter out on the basis that this impact will be assessed during future intrusive works and mitigated through the implementation of good design. In the absence of further information including the specific measures relied upon the Inspectorate is not in a position to scope this matter out at this stage. Accordingly, the ES should include an assessment of these matters, or the information referred to demonstrating agreement with the relevant consultation bodies and the absence of a likely significant effect.”</i>	In identifying the built environment as a potential receptor, the potential for a significant effect was scoped out on the basis that gaining additional information in relation to assessing the potential for aggressive ground conditions to pose a detrimental effect to inground structures is fundamental to industry standard engineering design and is inherently considered in the design process for a scheme such as the Proposed Scheme. The requirement for the assessment of aggressive ground conditions will be secured by a DCO requirement, for the completion of a Geotechnical Risk Register at the initial stages of design. The Applicant is currently in the process of securing the assessment of risks potentially posed to the built environment in the procurement of a geotechnically focussed ground

Section ID	Description	Scoping Opinion Comments	Response
			investigation. It is stated within the specification that a Geotechnical Interpretive Report shall be completed to include, amongst other matters, an assessment of ‘foundation protection’ to include the required concrete specification to protect future foundations against potential chemically aggressive ground conditions.
3.13.9	Agricultural soils	<i>“Agricultural soils are proposed to be scoped out as they have not been identified as a sensitive receptor. The majority of the Site is “urban” land with a small area classified as Grade 5 agricultural land. Considering the nature of the Proposed Development Site the Inspectorate is content for this matter to be scoped out of further assessment.”</i>	No response required
3.13.10	Mineral resources	<i>“It is stated that the mineral resources (namely underlying reserves of gypsum and salt) are already sterilised by existing development within the Site and wider surrounding area. it is also stated that the Proposed Development would also represent a sterilisation of less than 1% of the overall mineral resource of the Tees Valley. Paragraph 17.4.19 states that the Tees Valley Core Strategy includes plans for Mineral Safeguarding Areas. In the absence of further information such as evidence demonstrating clear agreement with relevant statutory bodies such as the Mineral Planning Authority the Inspectorate is not in a position to agree to scope this matter from the assessment. Accordingly, the ES should include an assessment of these matters, or the information referred to demonstrating agreement with the relevant</i>	Given the significant depth to the safeguarded minerals beneath the Site, the proposal to scope out mineral resources remains. The deep mineral reserves are already extensively covered by existing industrial development in the area and although some elements of the Scheme may restrict access from the surface to the reserves, overall, the Proposed Scheme does not significantly restrict future extraction. It is considered that although the Proposed Scheme restricts gaining access from the surface access for any

Section ID	Description	Scoping Opinion Comments	Response
		<i>consultation bodies and the absence of a likely significant effect.”</i>	future extraction to the minerals at depth, this can be gained from beyond the Scheme Boundary. At this stage, agreement with the MPA has not been confirmed in relation to the scoping out further assessment of the potential effect to Mineral Resources. The Applicant will liaise with the MPA to seek approval for this approach.
3.13.11	Decommissioning	<i>“This section of the Scoping Report<sup>5</sup> does not refer to the decommissioning phase. The ES should consider the potential for likely significant effects during decommissioning of the Proposed Development.”</i>	Decommissioning of the facility (as described in <b>Chapter 2: Site and Proposed Scheme Description (Volume 1)</b> ) will be completed in accordance with a Decommissioning Plan which will detail the appropriate environmental management procedures to be put in place. The Decommissioning Plan, secured by DCO requirement, will also include emergency procedures to be followed to minimise the potential pollutive effects of an accidental spill or leak of potential contamination during the Decommissioning Phase. In implementing a detailed Decommissioning Plan, it is considered unlikely that there will be significant effects to Geology and Soils as a result of the Decommissioning Phase.

Section ID	Description	Scoping Opinion Comments	Response
Environment Agency	Tidal impacts	<p><i>“Existing pollution risks should be considered with the additional site investigation and CSM work to be completed.”</i></p> <p><i>Due to the proximity of the coast, the shallow system is likely to be impacted by tidal changes. This would include changes to shallow groundwater levels, flow mechanisms and potential variability in water quality. Sampling and monitoring should ensure that tidal impacts are accounted for.</i></p>	Monitoring of the hydrological regime would be included as part of the Ground Investigation works that the applicant will undertake as part of the development of the Proposed Scheme. This would include assessment of groundwater levels, flow mechanisms and water quality.
Environment Agency, page 8	Relic Slag Walls	<p><i>“As part of the historical land reclamation of the Seal Sands area, we are aware of the potential presence of a series of relic slag walls. Available information suggests several potential different arrangements of the slag walls. However, the true alignment, thickness and founding depth of the relic slag walls is unknown. Should relic slag walls be present with the development boundary, they will impact on the hydrogeological regime prevailing at the Site and could form preferential contaminant pathways. Therefore, the risk of encountering these features should be considered within the risk assessment and mitigation measures identified, where required.”</i></p>	Further investigation (both desk-based and intrusive if considered warranted) of the potential relic structures will be completed as part of design development and geo-environmental works. These works are outside of the scope of the EIA.

## 3.7. DEFINING THE STUDY AREA

- 3.7.1. The Study Area for each environmental topic is set out within the respective topic specific Chapters of this report (see **Chapters 5: Air Quality (Volume 1)** to **Chapter 19: Cumulative Effects (Volume 1)**).
- 3.7.2. It is also recognised that some effects impact a defined area, for example direct impacts on statutory designated ecological sites, whereas other impacts are more widespread, for example considering the potential effects on a landscape character area.

## 3.8. ESTABLISHING BASELINE CONDITIONS

- 3.8.1. Likely significant environmental effects are described in this PEIR in relation to the extent of changes to the existing baseline environment as a result of the construction and/or operation of the Proposed Scheme. The baseline environment includes the existing environmental characteristics and conditions based on surveys undertaken and information available at the time of the assessment.
- 3.8.2. Baseline conditions will be established by:
- Site visits and surveys;
  - Desk based studies; and
  - Modelling.
- 3.8.3. The baseline conditions for each technical topic as they are currently understood are set out within **Chapters 5: Air Quality (Volume 1)** to **Chapter 19: Cumulative Effects (Volume 1)** of this PEIR.
- 3.8.4. The baseline conditions used in this PEIR will vary depending on the timing of surveys or the date at which data sources have been produced/assessed. It is anticipated that information required to inform the baseline environment for the assessments will be based on data obtained or surveys completed between Q1 of 2023 and Q3 of 2024. Where appropriate, existing baseline data collected prior to this may be used to inform the assessment if it is deemed to remain relevant. Where required, surveys to inform baseline data will continue to be carried out, with the data being presented in the ES.
- 3.8.5. Data obtained from third party sources may be older, but the origin of all third-party data will be clearly outlined, alongside any limitations and assumptions.
- 3.8.6. Baseline data which is deemed to be confidential in nature, such as that relating to protected species, will be provided in separate confidential appendices, due to the sensitivity of such species records.

### LIMITATIONS

- 3.8.7. The period of validity for each set of baseline data collected is set out in this PEIR and will be set out in the subsequent ES. Where appropriate, the requirement for any repeat surveys will be specified, such as for species data.

- 3.8.8. In order to collect baseline data, it may be necessary to collect data on site. Where it is not possible to access private land, data will be collected from publicly accessible land only or obtained from other sources.

## 3.9. ESTABLISHING FUTURE BASELINE CONDITIONS

- 3.9.1. This PEIR and the ES will also include the outline of the likely evolution of the existing baseline without implementation of the Proposed Scheme based on available information and knowledge. This information will be set out in the description of the Proposed Scheme (which is proposed to be Chapter 2 of the ES).
- 3.9.2. Throughout the EIA process the Applicant will consider developments to be included in the future baseline and development to be assessed as part of the cumulative effects assessment (see **Chapter 19: Cumulative Effects (Volume 1)** for further information).

### RELATIONSHIP WITH NZT

- 3.9.3. It is preferred that NZT will be operational and connected to the Proposed Scheme from the beginning of the operation phase of the Proposed Scheme. However, as this is not a certainty, and the Proposed Scheme is not dependent on the operational NZT project, an alternative scenario of a delay between the Proposed Scheme's operational phase to the operational connection to NZT will be assumed. This is to account for delays on the NZT project and works to facilitate connectivity with the Proposed Scheme.
- 3.9.4. The EIA Scoping Opinion<sup>4</sup> requested details of an alternative scenario whereby the connection to NZT was not available. Alternative scenarios are being investigated such as biogenic venting or export off-Site to alternative CO<sub>2</sub> Transport and Storage (T&S) Infrastructure and will be confirmed in the ES.

### ONSITE WORKS

- 3.9.5. Onsite surveys have been undertaken since the EIA Scoping Report<sup>5</sup> was prepared and this has increased the knowledge of existing site conditions. This includes the area directly to the north of the former TV1 and TV2 facilities forming the majority of the SAF Plant Site which is in the land ownership of North Tees Limited (NTL).
- 3.9.6. This area was initially characterised as a derelict brownfield area of previous works and uneven ground from aerial photography and online sources. Ecology surveys have since characterised this area as potential saltmarsh with informal watercourses traversing the area. Investigations and further surveys have been attempted to determine hydrological continuity, the condition and value of the habitat in addition to the quality and source of the standing water, however these have not been possible due to land access limitations. Surveys have also identified a series of watercourses within the Site Boundary which are a mixture of natural channels, culverts or modified/diverted channels created to facilitate previous uses.
- 3.9.7. It is understood that NTL has a valid and extant existing consent 01/2203/P to infill this area as part of a wider land profiling works. The Applicant has been informed through ongoing discussions that NTL intend to undertake the land profiling works in Q2 2024

under approved plans and that compensation for the habitats has been agreed and implemented.

- 3.9.8. The Applicant has been in discussions with Natural England and it has been agreed that the basis of assessment for this PEIR is that the finishing land profile will be the future baseline as the habitats will no longer exist and will be mitigated accordingly as part of the approved consent. This basis of assessment will be reviewed in line with the commencement of these works and also further discussions with NTL, Stockton on Tees Council and Natural England.

## 3.10. CONSIDERATION OF ALTERNATIVES

- 3.10.1. Regulation 14(2)(d) of the EIA Regulations states that an ES should include:

*“a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment.”*

- 3.10.2. As part of the iterative design process, the Proposed Scheme will continue to evolve to take account of matters such as environmental constraints and opportunities. This will be recorded within the ES as embedded mitigation (see **Section 3.7**).
- 3.10.3. The assessment of alternatives will include a consideration of alternative sites, alternative technologies, infrastructure locations, the construction strategy and best available technology (BAT) (where relevant). The ES will present the consideration of alternatives for the Proposed Scheme. **Appendix 3A: Consideration of Alternatives (Volume 3)** presents the proposed approach to be taken in the ES in more detail. The main reason for selecting the chosen options (location and technology) will be provided in the ES, including a comparison of environmental effects.

## 3.11. APPROACH TO MITIGATION

- 3.11.1. IEMA issued ‘Delivering Quality Development’<sup>6</sup> in July 2016. In accordance with these guidance documents, three types of mitigation will be identified and used within the ES:
- Primary mitigation – modifications to the location or design during the pre-application phase that are treated as an inherent part of the Proposed Scheme.
  - Secondary mitigation – actions that will require further activity in order to achieve the anticipated outcome. The effectiveness of such measures will be assessed within the ES and appropriate mitigation will be secured by the DCO or other suitable mechanism.
  - Tertiary mitigation – actions that would occur with or without input from the EIA. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are standard to meet other existing legislative requirements, or actions that are standard practices used to manage commonly

occurring environmental effects. These measures are treated as an inherent part of the Proposed Scheme.

- 3.11.2. The primary and tertiary mitigation will be presented in the Proposed Scheme description in the ES and within the individual ES Chapter for each environmental topic. Primary and tertiary mitigation will be referred to as ‘embedded mitigation’. The assessment of the likely significant environmental effects for the pre-mitigation scenario will take embedded mitigation into account in determining the magnitude of change.
- 3.11.3. Following assessment of the likely significant effects of the Proposed Scheme, any further secondary mitigation measures (referred to as ‘additional mitigation’) will be outlined within the individual ES Chapters. These mitigation measures will further reduce an adverse effect or enhance a beneficial one; examples include the preparation of a travel plan or landscape planting.
- 3.11.4. A summary of the embedded mitigation will be included in the Site and Proposed Scheme Description Chapter of the ES (proposed as Chapter 2) and in the Design Report which will accompany the application for a DCO. The additional mitigation will be recorded in a summary Chapter of the ES. In addition, a Register of Commitments will also document the additional mitigation and monitoring proposed and will indicate in which certified documents the commitments will be implemented and secured. This includes mitigation presented in this PEIR that is relied on to scope out issues from subsequent stages of the EIA. The delivery of these mitigation measures will be secured through requirements in the draft DCO and other suitable mechanisms, as appropriate.
- 3.11.5. Protective provisions and side agreements are further mechanisms by which mitigation measures to protect the interests of utility owners will be secured. Relevant protective provisions will be included within the draft DCO as required.

## **MONITORING**

- 3.11.6. The EIA Regulations require, where appropriate, the monitoring of potential significant adverse effects. Monitoring arrangements proposed as part of the identified mitigation are outlined within the Technical Chapters of this PEIR. These will also be detailed within the relevant Technical Chapter of the ES and within the Register of Commitments and draft DCO (as appropriate) and the results of any monitoring will be shared with relevant organisations, where applicable.

## **3.12. ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS**

- 3.12.1. This PEIR reports on the likely significant effects for the construction, operation (including maintenance) and decommissioning (where required) phases of the Proposed Scheme at this stage of the design, and reports an estimate, by type and quantity, of expected residues and emissions.
- 3.12.2. The design of the Proposed Scheme will continue to be progressed and there will be a need to continue refining the design up to the detailed design stage, requiring a certain

level of flexibility to be maintained. Therefore, in line with the Inspectorate Advice Note Nine (Using the Rochdale Envelope)<sup>7</sup>, a Rochdale Envelope approach will be adopted to define the parameters within which the construction and operation of the Proposed Scheme will be undertaken. These will be defined within the Application drawings and the draft DCO and are described within **Chapter 2: Site and Proposed Description (Volume 1)**. **Figure 1-2 (Volume 2)** and **Figure 2-1 (Volume 2)** presents the layout of the Proposed Scheme. This plan has, and will continue to, inform the development of envelopes, parameters, or limits of deviation within which the construction and operation of the Proposed Scheme will be undertaken.

- 3.12.3. The 'parameters' approach presents the maximum envelope within which the built development may be undertaken as assessment of the parameters ensures the comprehensive reasonable 'worst case' assessment of the full area within which the Proposed Scheme could be brought forward. This ensures the assessment of environmental effects associated with the Proposed Scheme will be the reasonable worst case, and that the actual development to be carried out within the parameters would be no worse than the effects reported in this PEIR or the subsequent ES. The detailed design and construction methodology for the Proposed Scheme will be developed within these parameters without the need for further assessment, although design approvals from the relevant local planning authority will be required to confirm compliance with the assessed parameters.
- 3.12.4. The following criteria will be considered when determining significance:
- Likelihood of occurrence;
  - Geographical extent;
  - Adherence of the proposals to legislation and planning policy;
  - Adherence of the proposals to international, national and local standards;
  - Sensitivity of the receiving environment or other receptor;
  - Value of the affected resource;
  - Whether the effect is temporary or permanent (to be defined within this PEIR or the ES depending on technical topic (see **Chapter 5: Air Quality (Volume 1)** to **Chapter 19: Cumulative Effects (Volume 1)** for more information);
  - Whether the effect is short, medium or long-term in duration (to be defined within the ES);
  - Whether the effect is reversible or irreversible (to be defined within the ES);
  - Inter-relationship between effects (both cumulatively and in terms of potential effect interactions); and
  - The outputs of stakeholder and public engagement.
- 3.12.5. The methodology for assessing the significance of an effect will vary between environmental factors but in principle, will be based on the environmental sensitivity (or value / importance) of a receptor and the magnitude of change from baseline conditions.
- 3.12.6. Where topic-specific guidance requires that specific criteria or scales for determining significance are to be used, this will be outlined in the relevant Chapter.

3.12.7. In the absence of topic-specific guidance, both the magnitude of change and sensitivity (or value / importance) will be assessed on a scale of high, medium, low, and negligible. The significance of each effect will be assessed against the magnitude of change and the sensitivity (or value / importance) of the receptor or receiving environment using the matrix in **Table 3-2**.

**Table 3-2: Matrix of Determining Significance of Effect**

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

3.12.8. Where a range (e.g. Major to Moderate) is listed in **Table 3-2**, significance criteria will be defined in accordance with technical guidance in the respective topic Chapters. Where such guidance isn't available, professional judgement will be used to define the significance. Only Moderate and Major effects are considered to be significant.

3.12.9. Within the ES, tables which summarise the likely significant effects will be provided within each Technical Chapter. These tables will outline sensitive receptors, mitigation measures and residual effects (i.e. once mitigation has been taken into account). Distinctions will be made between direct and indirect; short, medium, and long-term; permanent and temporary; and beneficial and adverse effects.

3.12.10. Inter-Project Effects of other existing and approved projects and Intra-Project Effects (i.e. the cumulation of multiple environmental effects arising from the Proposed Scheme) will be considered in a separate section as outlined in **Chapter 19: Cumulative Effects (Volume 1)**.

### **3.13. ASSESSMENT OF TRANSBOUNDARY IMPACTS**

3.13.1. Regulation 32 of the EIA Regulations sets out the procedural duties required where the SoS deems that an NSIP is likely to have significant effects on the environment in an European Economic Area (EEA) State; or where an EEA State deems that its environment is likely to be significantly affected by an NSIP. Further guidance is provided in the Inspectorate Advice Note Twelve<sup>8</sup>.

3.13.2. As per the results of the EIA Scoping Opinion<sup>4</sup>, it is not anticipated that the Proposed Scheme will have significant transboundary effects.

## 3.14. ASSESSMENT OF HEAT, LIGHT AND RADIATION

3.14.1. Schedule 4 of the EIA Regulations requires consideration of the likely significant effects of the Proposed Scheme resulting from the emission of heat, light and radiation. However, no significant sources of such emissions are anticipated and as such it is proposed to scope this topic out of the ES. Further information on estimated quantities of these factors can be found in **Chapter 10: Landscape and Visual (Volume 1)** and **Chapter 17: Major Accidents and Disasters (Volume 1)** of this report. A Draft Lighting Strategy will also be included in the DCO application.

## 3.15. STRUCTURE OF THE ES

3.15.1. At this stage it is anticipated that the ES will be structured as follows:

- Volume 1 – Main Text:
  - Chapter 1 – Introduction;
  - Chapter 2 – Site and Proposed Scheme Description;
  - Chapter 3 – Consideration of Alternatives;
  - Chapter 4 – Approach to EIA;
  - Chapter 5 – Consultation;
  - Chapter 6 – Air Quality;
  - Chapter 7 – Noise and Vibration;
  - Chapter 8 – Terrestrial Ecology;
  - Chapter 9 – Freshwater and Marine Ecology;
  - Chapter 10 – Water Environment and Flood Risk;
  - Chapter 11 – Landscape and Visual;
  - Chapter 12 – Greenhouse Gases;
  - Chapter 13 – Climate Change Resilience;
  - Chapter 14 – Materials and Waste;
  - Chapter 15 – Socioeconomics;
  - Chapter 16 – Population and Human Health;
  - Chapter 17 – Traffic and Transport;
  - Chapter 18 – Major Accidents and Disasters;
  - Chapter 19 – Marine Navigation;
  - Chapter 20 – Cumulative Effects; and
  - Chapter 21 – Summary of Significant Effects.
- Volume 2 – Figures.
- Volume 3 – Appendices.

#### **ADDITIONAL DOCUMENTATION**

- 3.15.2. A number of supporting application documents which will not form part of the ES, but which will be relied upon and referred to within the ES, will be submitted as part of the application for a DCO. Such documents will be inclusive of, but not limited to, the ES Non-Technical Summary (NTS), OCoCP and a Register of Commitments.

### **3.16. COORDINATION OF ASSESSMENTS**

- 3.16.1. There are several other associated assessments that will be undertaken to support the application for a DCO as follows:

#### **HABITATS REGULATIONS ASSESSMENT (HRA)**

- 3.16.2. The overarching aim of the HRA is to determine, in view of a site's conservation objectives and qualifying interests, whether a plan or project (either in isolation and / or in-combination with other plans or projects) could lead to adverse effects on the integrity of a National Network Site (either a statutory designated Special Protection Area (SPA) or Special Area of Conservation (SAC))<sup>9</sup>.
- 3.16.3. **Appendix 7B: Information to Inform a Habitat Regulations Assessment: Stage 1 – Screening (Volume 3)** is included in this PEIR. Following engagement with Natural England, and ongoing development of the Proposed Scheme, a HRA comprising of Stage 2 - Appropriate Assessment will be prepared to accompany the application for development consent for the matters screened in by the Stage 1 report. The purpose of the Stage 2 document is to make an Appropriate Assessment of the likelihood of adverse effects on integrity arising as a result of the Proposed Scheme (and other schemes that could act in-combination with the Proposed Scheme ('inter-project')) on National Network Site(s) in view of its conservation objectives, and whether mitigation can ensure that adverse effects on integrity can be avoided. The Appropriate Assessment will also determine whether further HRA stages need to be applied to achieve compliance with legislation.
- 3.16.4. Given the sensitivities of certain surrounding habitats and the range of species they can support, works at the Site are likely to require assessment of other Important Ecological Features<sup>10</sup> and an HRA will be prepared. If 'likely significant effects' (LSE) are identified, a detailed assessment will be provided to assess whether the proposals could result in adverse effects on the integrity of relevant International Sites. Further information on habitats and associated species can be found in **Chapter 7: Terrestrial Ecology (Volume 1)**.
- 3.16.5. Whilst the over-arching objectives of EIA and HRA are similar, their scope, level of detail and terminology vary. As such, these processes will be undertaken separately. However, the scope presented within this PEIR has been developed to ensure that the needs of these processes have been considered to ensure a coordinated assessment.

### **BIODIVERSITY NET GAIN (BNG) ASSESSMENT**

- 3.16.6. Following industry best practice guidance, the BNG assessment will analyse the habitats to be retained, enhanced, created, or lost within the Site. It will identify whether habitat compensation is required and will demonstrate benefits resulting from BNG in connection with the Proposed Scheme. Further information on the approach to BNG can be found in **Chapter 7: Terrestrial Ecology (Volume 1)** and **Chapter 8: Freshwater and Marine Ecology (Volume 1)** of this PEIR.

### **WATER FRAMEWORK DIRECTIVE (WFD) ASSESSMENT**

- 3.16.7. A WFD Screening and Scoping Report considers the potential for construction and operation impacts from the Proposed Scheme upon the relevant WFD quality elements, and the potential for impacts to the River Tees. This included identifying likely risks to: hydromorphology, biology, water quality, WFD protected areas and the spread of invasive non-native species. This report is appended to this PEIR as **Appendix 9A: Water Framework Directive Screening and Scoping Assessment (Volume 3)**.
- 3.16.8. Ongoing engagement with the Environment Agency is being undertaken alongside ongoing design development, which will inform the scope of the WFD Assessment. Should a full WFD Assessment be required, this will be presented as a Technical Appendix to Chapter 9: Water Environment and Flood Risk of the ES. The WFD Assessment will consider the River Tees and Chalk Groundwater Body. Further information on both of these waterbodies is presented in **Chapter 9: Water Environment and Flood Risk (Volume 1)** and **Appendix 9A: Water Framework Directive Screening and Scoping Assessment (Volume 3)**.

### **FLOOD RISK ASSESSMENT (FRA)**

- 3.16.9. As the Proposed Scheme is located within Flood Zone 2 and Flood Zone 3 areas, an FRA will be required<sup>11</sup>. The FRA will be prepared in accordance with the National Planning Policy Framework (NPPF)<sup>12</sup> and NPS EN-1 (2023)<sup>13</sup> and will qualitatively assess the potential implications of the Proposed Scheme on flood risk to people and property elsewhere, as well as assessing the potential risk of flooding to the Proposed Scheme. The FRA will be supported by hydraulic modelling of the proposed works, if required. The need and scope for hydraulic modelling will be discussed with the EA. Further information is presented in **Chapter 9: Water Environment and Flood Risk (Volume 1)**.

### **NAVIGATION RISK ASSESSMENT (NRA)**

- 3.16.10. The overarching aim of the NRA is to determine, in view of the Proposed Scheme's location on the River Tees, whether the Proposed Scheme's marine infrastructure could lead to adverse effects on navigation within the river. The NRA will consist of river navigation analysis, the identification of baseline risk controls, stakeholder engagement and risk assessments. The NRA will inform the Marine Navigation Chapter of the ES. Further information is presented in **Chapter 18: Marine Navigation (Volume 1)**.

### 3.17. ASSUMPTIONS AND LIMITATIONS

3.17.1. At the time of preparing this PEIR the Proposed Scheme design continues to evolve. It is currently recognised that:

- The land requirements of the Proposed Scheme within the Site Boundary are yet to be wholly finalised;
- Assumptions around the operation of NZT and the future conditions of NTL land forming the SAF Plant Site (described in **Section 3.9** above and **Chapter 2: Site and Proposed Scheme Description (Volume 1)**) and the presentation of both construction wharf Option 1 and Option 2 (see **Chapter 2: Site and Proposed Scheme Description (Volume 1)**) have created the conditions for the assessment of multiple scenarios at the ES stage;
- Potential areas for ecological mitigation, flood mitigation, nutrient neutrality mitigation and biodiversity net gain are yet to be confirmed;
- The structure of the ES and coordination of additional supporting assessments are based on the Proposed Scheme design and parameters found in **Chapter 2: Site and Proposed Scheme Description (Volume 1)**; and
- Early works (as detailed in **Figure 2-4 (Volume 2)**) will be completed separately and ahead of the construction of the Proposed Scheme.

## 3.18. REFERENCES

- <sup>1</sup> National Infrastructure Planning. (2020). 'Advice Note Seven (Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements.' Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/>
- <sup>2</sup> UK Government. (2017). 'The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 [SI 2017/572].' Available at: <https://www.legislation.gov.uk/uksi/2017/572/contents/made>
- <sup>3</sup> IEMA. 'IEMA Quality Mark.' Available at: <https://www.iema.net/corporate-programmes/eia-quality-mark>
- <sup>4</sup> The Planning Inspectorate. (2023). 'Scoping Opinion: Lighthouse Green Fuels Project.' Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010150/EN010150-000012-EN010150%20-%20Lighthouse%20Green%20Fuels%20-%20Scoping%20Opinion.pdf>
- <sup>5</sup> Lighthouse Green Fuels DCO. (2023). 'Environment Impact Assessment Scoping Report.' Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010150/EN010150-000006-LGF%20EIA%off-site%20Scoping%20Volume%201%20-%20Main%20Text%20and%20Figures.pdf>
- <sup>6</sup> IEMA. (2016). 'Environmental Impact Assessment Guide to Delivering Quality Development.' Available at: <https://www.iema.net/download-document/7014>
- <sup>7</sup> National Infrastructure Planning. (2018). 'Advice Note Nine: Rochdale Envelope.' Available at: <https://infrastructure.planninginspectorate.gov.uk/legislationand-advice/advice-notes/advice-note-nine-rochdale-envelope/>
- <sup>8</sup> National Infrastructure Planning. (2020). 'Advice Note Twelve: Transboundary Impacts and Processes.' Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-twelve-transboundary-impacts-and-process/>
- <sup>9</sup> DEFRA. (2021). Policy Paper: 'Changes to the Habitats Regulations 2017.' Available at: <https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017>
- <sup>10</sup> CIEEM. (2019). 'Guidelines for Ecological Impact Assessment in the UK and Ireland.' Available at: <https://cieem.net/wp-content/uploads/2019/02/Combined-EcIA-guidelines-2018-compressed.pdf>
- <sup>11</sup> DEFRA. (2017). 'Guidance: Flood Risk Assessment in Flood Zones 2 and 3.' Available at: <https://www.gov.uk/guidance/flood-risk-assessment-in-flood-zones-2-and-3>
- <sup>12</sup> UK Government. (2021). 'Policy Paper: National Planning Policy Framework.' Available at: <https://www.gov.uk/government/publications/national-planning-policyframework--2>
- <sup>13</sup> Department for Energy Security & Net Zero. (2023). 'Overarching National Policy Statement for Energy 2023 (EN-1).' Available at: <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1>

The logo for Lighthouse Green Fuels, featuring the company name in a bold, sans-serif font. The text is white and is contained within a white rectangular box. The background of the top half of the page is a solid green color, with a blue diagonal stripe running from the bottom left towards the top right, partially overlapping the green area.

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