

# **H2Teesside Project**

# Planning Inspectorate Reference: EN070009

Land at and in the vicinity of the former Redcar Steel Works site, Redcar and in Stockton-on-Tees, Teesside

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The Planning Act 2008



# Applicant: H2 Teesside Ltd

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## GLOSSARY

ABBREVIATION	DESCRIPTION	
AGI	Above Ground Installation - installations used to support the safe and efficient operation of a pipeline; above ground installations are needed at the start and end of a cross-country pipeline and at intervals along the route.	
AOD	Above Ordnance Datum - a spot height (an exact point on a map) with an elevation recorded beside it that represents its height above a given datum.	
BEIS	Department of Business, Energy and Industrial Strategy - a department of the UK Government (former name for the Department for Energy Security and Net Zero)	
ССБТ	Combined Cycle Gas Turbine - a highly efficient form of energy generation technology. An assembly of heat engines work in tandem using the same source of heat to convert it into mechanical energy which drives electrical generators and consequently generates electricity.	
ССР	Carbon Capture Plant - equipment used to capture carbon dioxide emissions from a power plant or industrial installation.	
CCUS	Carbon Capture, Usage and Storage - is group of technologies designed reduce the amount of carbon dioxide (CO <sub>2</sub> ) released into the atmosphe from coal and gas power stations as well as heavy industry including ceme and steel production. Once captured, the CO <sub>2</sub> can be either re-used various products, such as cement or plastics (usage), or stored in geologic formations deep underground (storage).	
CO <sub>2</sub>	Carbon Dioxide - an inorganic chemical compound with a wide range c commercial uses.	
DAS	Design and Access Statement - a document detailing the design of a proposed development including the design process that has been followed	
DCO	Development Consent Order - a Development Consent Order made by the relevant Secretary of State pursuant to The Planning Act 2008 to authorise a	



ABBREVIATION	DESCRIPTION		
	Nationally Significant Infrastructure Project. A DCO can incorporate or remove the need for a range of consents which would otherwise be required for a development. A DCO can also include rights of compulsory acquisition.		
DESNZ	Department for Energy Security and Net Zero		
EIA	Environmental Impact Assessment - a term used for the assessment of environmental consequences (positive or negative) of a plan, policy, program or project prior to the decision to move forward with the proposed action.		
EPC	Engineering, Procurement and Construction.		
ES	Environmental Statement - a report in which the process and results of an Environment Impact Assessment are documented.		
FEED	Front End Engineering Design - engineering which comes after the conceptual design or feasibility study focusing on the technical requirements and estimated investment cost for the project.		
FID	Final Investment Decision - a financial decision that needs to be made in order to proceed with a project.		
На	Hectares - a metric unit of measurement for area. There are 10,000 square metres in a hectares. One hectare is equal to 2.471 acres.		
НР	High Pressure.		
HRSG	Heat Recovery Steam Generator - an energy recovery heat exchanger that recovers heat from a hot gas stream. It produces steam that can be used in a process (cogeneration) or used to drive a steam turbine (combined cycle).		
Km	Kilometre - a metric unit of measurement for distance, equal to 1,000 metres.		
kV	Kilovolts - a unit of electrical potential. There are 1,000 volts in a kilovolt.		
LPA	Local Planning Authority - the planning department within the local authority where a development is situated.		
MLWS	Mean Low Water Springs - the height of the mean low water springs is the average height obtained by the two successive low waters during those periods of 24 hours when the range of the tide is at its greatest.		
m	Metres - a metric unit of measurement for length, equal to 100 centimetres		
mm	Millimetres - a metric unit of measurement for length. There are 1000 millimetres in a metre and 10 millimetres in a centimetre.		
Mt	Million Tonnes - a metric unit of weight.		
NIZ	Northern Industrial Zone – part of the South Tees Area/Teesworks area.		



ABBREVIATION	DESCRIPTION	
NPPF	National Planning Policy Framework- a document setting out the Government's planning policies for England.	
NPS	National Policy Statement - a statement produced by Government under the Planning Act 2008 providing the policy framework for Nationally Significant Infrastructure Projects. They include the Government's view of the need for and objectives for the development of Nationally Significant Infrastructure Projects in a particular sector such as energy and are used to determine applications for such development.	
NSIP	Nationally Significant Infrastructure Project - defined by the Planning Act 2008 and covering projects relating to energy (including generating stations, electric lines and pipelines); transport (including trunk roads and motorways, airports, harbour facilities, railways and rail freight interchanges); water (dams and reservoirs, and the transfer of water resources); waste water treatment plants and hazardous waste facilities. These projects are only defined as nationally significant if they satisfy a statutory threshold in terms of their scale or effect.	
NTS	National Transmission System for gas - the gas national grid used to transport natural gas around the UK.	
NZT	Net Zero Teesside.	
PA 2008	The Planning Act 2008 - setting out the legislative regime for Nationally Significant Infrastructure Projects.	
PNS	Projects of National Significance. Projects that are brought into the Planning Act 2008 regime via a Section 35 Direction issued by the Secretary of State. The aspects of the Proposed Development that are the subject of the Section 35 Direction are PNS as no part of those aspects are currently considered to be a NSIP.	
Main Site	Power, Capture and Compression Site - the part of the Proposed Development Site that will accommodate the Electricity Generating Station, its Carbon Capture Plant and the High-Pressure Compressor Station.	
PPG	Planning Practice Guidance - supplements the National Planning Policy Framework and provides detailed planning guidance to local planning authorities and applicants in England.	
Q2	Quarter 2 - the months of April, May and June in any calendar year.	
RBT	Redcar Bulk Terminal - a deep-water marine terminal situated on the South Bank of the River Tees on the North-East coast of the UK.	
RCBC	Redcar and Cleveland Borough Council - the Local Planning Authority for part of the Site.	



ABBREVIATION	DESCRIPTION	
SoS	Secretary of State - the decision maker for DCO applications and head of Government department.	
SPD	Supplementary Planning Document - a document that supplements the policies contained in the statutory development plan for the area.	
SSI	Sahaviriya Steel Industries - the former owner of part of the former Redcar Steel Works Site.	
STBC	Stockton-on-Tees Borough Council - the Local Planning Authority for part of the Site.	
STDC	South Tees Development Corporation - a Mayoral Development Corporatio responsible for approximately 400 hectares of land south of the River Tee in the borough of Redcar and Cleveland.	
2015 Order	The Town and Country Planning (Development Management Procedure) (England) Order 2015 - the Order setting out the requirements for Design and Access Statements.	



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# 1.0 INTRODUCTION

- 1.1.1 Section 6.0 of the Planning Statement (Document Ref. 5.2) provides an assessment of the Proposed Development against relevant planning policy. This document supplements Section 6.0 of the Planning Statement and provides an assessment of the Proposed Development against the 'Generic Impacts' and 'Technology Specific Considerations' set out in the relevant National Policy Statements ('NPSs') for energy (NPSs EN-1, EN-4 and EN-5). These assessments are set out at Tables 6.1 and 6.2 within this document. Table 6.3 provides and assessment of the Proposed Development against the North East Marine Plan. Table 6.4 assesses the Proposed Development against National Planning Policy Framework ('NPPF') policies and Table 6.5 provided an assessment of the Proposed Development against the local development plan policies of the three host local authorities Redcar & Cleveland Borough Council, Stockton-on-Tees Borough Council and Hartlepool Borough Council.
- 1.1.2 Tables 6.1 to 6.5 are set out below:

# Table 6.1: Generic Impacts

GENERIC IMPACT	SUMMARY	ASSESSMENT
Air quality and emissions (EN-1, 5.2)	EN-1 acknowledges that air quality and emissions are likely to be a key area of concern when assessing the development of generating stations.	Chapter 8 'Air Quality' of ES Volume I addresses the potential air quality effects of the Proposed Development during construction, operation and decommissioning. The Chapter considers the potential effect on identified human health and ecological receptions in terms of dust generation during
	Paragraph 5.2.8 of EN-1 states where a project is likely to have adverse effects on air quality it is a requirement for	construction; emissions from mobile plant during construction; emission from road traffic during construction and operation; and process emissions from the operational Proposed Development.
	applicants to assess issues relating to air quality and emissions as part of an ES.	No AQMAs have been declared for the Proposed Development Site or the surrounding area. The nearest AQMA to the Proposed Development Site is located outside of the defined air quality Study Area (refer to Chapter 8 'Air
	Paragraph 5.2.9 states that the ES should describe:	Quality' Section 8.3 of ES Volume 1), in Staithes, approximately 20 km to the south-east of the Proposed Development Site. This AQMA is designated for the exceedance of the 24-hour PM10 limit value. Based on Defra forecast models
	<ul> <li>existing air quality concentrations and the relative change in air quality from existing levels;</li> </ul>	and local authority monitoring data, no exceedances of the AQS have been identified in the vicinity of the Proposed Development Site.
	<ul> <li>any significant air quality effects, mitigation action taken and any residual effects, distinguishing between the project stages and taking account of any significant emissions from any road traffic generated by the project;</li> </ul>	Table 8.5 list the identified human and ecological receptors that could potentially be impacted by the Proposed Development. The receptors for construction (Road Traffic Receptor 'R') and operational stages (Operational Receptor 'O') are shown in Figures 8-1: Air Quality Study Area – Human Health Receptors, Monitoring, 8-2: Air Quality Study Area – Ecological Receptors and 8- 3: Air Quality Study Area – Construction (ES Volume II, EN070009/APP/6.3).





GENERIC IMPACT	SUMMARY	ASSESSMENT
	<ul> <li>the predicted absolute emissions, concentration change and absolute concentrations as a result of the proposed project, after mitigation methods have been applied; and</li> <li>any potential eutrophication</li> </ul>	A Framework Construction Environmental Management Plan (CEMP) is included at Appendix 5A: Framework CEMP (ES Volume III, EN070009/APP/6.4), which sets out the key measures to be employed during the construction of the Proposed Development, to control and minimise air quality and dust impacts on the environment. The submission and approval of the Final CEMP will be secured by DCO Requirement 15 prior to the start of construction.
	impacts.	For the operation stage the Hydrogen Production Facility will require an Environmental Permit and will comply with this under the Environmental
	Paragraph 5.2.16 states that air quality considerations will be given substantial weight where a Proposed Development would lead to deterioration in air quality. Air quality considerations will also be important where substantial changes in air quality levels are expected, even if this does not lead to any breaches of national air quality limits.	Permitting (England and Wales) Regulations 2016. In addition, the Proposed Development will be operated in line with appropriate standards, whilst the operator will implement and maintain an Environment Management System (EMS) which will conform with International Standards Organisation (ISO) 14001. The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard. The Proposed Development will be designed such that process emissions to air comply with the ELV requirements as agreed in the environmental permit, as per the emerging techniques for hydrogen production with carbon capture guidance. This will be agreed as part of the Environmental Permit Application
	Paragraph 5.2.12 states that where a proposed development is likely to lead to a breach of any relevant statutory air	with the Environment Agency. The Environment Agency will then regulate the operation of the Proposed Development.
	quality limits, objectives or targets, or affect the ability of a noncompliant area to achieve compliance within the timescales set out in the most recent	For the decommissioning stage a Decommissioning Environmental Management Plan (DEMP) would be produced pursuant to a DCO Requirement. The DEMP would consider in detail all potential environmental risks on the Proposed



GENERIC IMPACT	SUMMARY	ASSESSMENT
	relevant air quality plan/strategy at the time of the decision, the applicant should work with the relevant	Development Site and contain guidance on how risks can be removed or mitigated. The DEMP would also include an outline programme of works.
	authorities to secure appropriate mitigation measures to ensure that those statutory limits, objectives or	Section 8.6 sets out the likely air quality impacts and effects for the Proposed Development during the construction stage as follows:
	targets are not breached. Paragraph 5.2.19 requires decisions to take account of any relevant statutory air quality limits, objectives and targets and the projects ability to comply with these.	<ul> <li>Dust – Unmitigated dust impacts during the construction stage could result in a short-term Negligible to Medium impact of dust emissions on human health and a potential High impact on ecological receptors. However, with the implementation of the measures proposed in the Framework CEMP and the final CEMP, to be secure via a DCO Requirement, dust effects on sensitive receptors would be lowered to be Not Significant.</li> <li>Traffic - the air quality effects of construction traffic on human and ecological receptors are assessed as negligible and not significant.</li> <li>Traffic - the air quality effects released from the Proposed Development are predicted to result in negligible adverse effects at all human health receptors within the study area, and these are considered to be Not Significant.</li> <li>In terms of ecological receptors, the ecological receptor that is the most susceptible to impact, as a result of emissions from the Proposed Development, is the Teesmouth and Cleveland Coast SPA/Ramsar/SSSI, which is located adjacent to the Main Site. However, the annual average impacts of NOx can be considered Not Significant, given that the PEC remains below 70% of the relevant critical levels.</li> </ul>



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		The daily NOx concentration can also be considered Not Significant, given that the PC is less than the 10% screening criteria. The change in nitrogen deposition is also predicted to be less than 1% of the relevant critical load at the designated sites assessed, which is considered to be Not Significant. Similarly, the change in acid deposition is predicted to be less than 1% of the relevant critical load at the designated sites assessed, this is considered to be Not Significant.
		No additional mitigation has been identified as necessary for the construction, operational or decommissioning stages of the Proposed Development beyond the embedded mitigation measures proposed.
Biodiversity and geological conservation (EN- 1, 5.4; EN-4 2.21;	Paragraph 5.4.35 of EN-1 states that applicants should include appropriate avoidance, mitigation, compensation and enhancement measures as an	Chapter 12 of the ES – 'Ecology and Nature Conservation' identifies the potential impacts and effects on terrestrial and aquatic (freshwater, i.e. above Mean High Water Springs (MHWS)) ecology.
and EN-5, 2.7)	integral part of the proposed development. In particular, the applicant should demonstrate that:	The Applicants have undertaken a HRA which concludes that for the construction, operational and decommissioning stages there will be no adverse effects on the integrity of any European site either alone or in combination with other plans and projects. As such there is no requirement to consider
	<ul> <li>during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works</li> </ul>	alternatives to the Proposed Development as it will not adversely impact upon the SPA/Ramsar.
	<ul> <li>areas required for the works</li> <li>the timing of construction has been planned to avoid or limit disturbance</li> </ul>	The potential effects of the Proposed Development on biodiversity and ecology are assessed in detail within Chapters 12 'Ecology and Nature Conservation', 14 'Marine Ecology', and 13 'Ornithology' of ES Volume I. The surveys that have

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	<ul> <li>during construction and operation best practice will be followed to ensure that risk of</li> </ul>	informed the assessments are contained within ES Volume III. The conclusions of the assessments covered in these chapters are as follows:
	disturbance or damage to species or habitats is minimised, including as a consequence of transport access arrangements	Terrestrial and Aquatic ecology –The majority of residual effects are categorised as Not Significant (Negligible), indicating that the proposed mitigation measures are expected to address and minimise adverse impacts. Tables 12-9, 12-10 and 12-11 in Chapter 12 provides a summary of residual effects during construction,
	<ul> <li>habitats will, where practicable, be restored after construction works have finished</li> </ul>	operation and decommissioning of the Proposed Development. Marine ecology – The assessment of the residual effects has concluded that,
	<ul> <li>opportunities will be taken to enhance existing habitats rather than replace them, and where</li> </ul>	taking into account any proposed mitigation measures, there are no significant effects predicted for the Proposed Development.
	practicable, create new habitats of value within the site landscaping proposals. Where	Ornithology – The assessment of the residual effects has concluded that, taking into account any proposed mitigation measures, there are no significant effects predicted for the Proposed Development.
	habitat creation is required as mitigation, compensation, or enhancement, the location and quality will be of key importance.	Biodiversity Net Gain (BNG) - The Applicant notes that the provisions of the Environment Act 2021 relating to Biodiversity Net Gain ('BNG') in relation to Town and Country Planning Act 1990 application have now come into force.
	In this regard habitat creation should be focused on areas where the most ecological and	However, provisions relating to Planning Act 2008 projects have not yet come into force and are not expected to until at least November 2025.
	ecosystems benefits can be realised.	At a national level, this delay reflects the need for the complexities of infrastructure projects and its interaction with the BNG metric to be fully



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	<ul> <li>mitigations required as a result of legal protection of habitats or</li> </ul>	understood by Natural England and project promoters, acknowledging that they are not the same as blocks of land lost to housing developments.
	species will be complied with. EN-4 (Section 2.21) considers the effects of gas pipelines on biodiversity. It notes that with mitigation a pipeline can affect both landscape, visual amenity and ecology. In regards to biodiversity it is analysed that often pipelines can have effects on specific landscape elements within or adjacent to the pipeline route such as grasslands, field boundaries , trees, woodlands, and watercourses.	This is particularly true for a project such as the Proposed Development, with its numerous corridors involving a mix of above and underground land requirements for different types of pipelines, but which are also surrounded by a number of existing assets, necessitating differing limits of deviation. Infrastructure also have a range of 'temporary' land requirements that are shown in the red line boundary but may not in face involve habitat loss. As such, the true 'loss' of habitats to the Proposed Scheme are much less than would actually be the case than simply assuming that the loss includes the entirety of the Order limits. Natural England is therefore working with the energy and infrastructure industry to consider how best the metric can apply to projects such as this.
	Paragraphs 2.21.30 and 2.21.31 explain that the ES must include an assessment of the biodiversity and landscape and visual effects of the proposed route and of the main alternative routes considered. The application should also include proposals for reinstatement of the pipeline route as close to its original state as possible and take into account	A specific additional complexity for the Proposed Development is the Main Site. At the moment the Main Site is the subject of extensive demolition works of the old Teesworks steel plant and infrastructure; and it is anticipated it will also shortly be subject to extensive remediation activities. The former works are subject to restoration and habitat establishment requirements, and it is considered likely that this will apply to the remediation works. As such, the ecological baseline position of the site now would, for BNG purposes, be unrealistic in terms of establishing what the 'pre-development' habitat condition should be considered to be for the Main Site.



GENERIC IMPACT	SUMMARY	ASSESSMENT
	any requirements for agreements with	For these reasons, the Applicant has not submitted a BNG Report/Assessment
	the landowner to access areas for aftercare and management work.	as part of its DCO Application for the Proposed Development. Notwithstanding this, and mindful of the policy imperatives of the NPS, the Applicant is committed to ensuring that the ecological impacts of the Proposed
	EN-5 (Section 2.9) considers the effects that electricity network infrastructure can have on biodiversity, especially birds.	Development are fully mitigated, and where possible given the constraints of the Order limits and the Teesworks site more generally, deliver enhancements.
	Paragraph 2.9.6 requires the applicant to consider any such possible impacts, particularly on feeding and hunting grounds, migration corridors and breeding grounds.	The Applicant's proposals in this regard are set out in Chapter 12: Terrestrial Ecology and in the Outline Landscape and Biodiversity Management Plan. The measures in the latter will be developed into a Full BLMP 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.
		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 and RPSB 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 though a section 106 Agreement, will be able to demonstrate a wider qualitative net gain overall as a result of the Proposed Development.
		The use of trenchless technologies where possible will further minimise effects on habitats and species. Permanent habitat losses associated with pipelines will be minimised through post-construction reinstatement of pipeline routes as close to its original state as possible. While this does not remove the



GENERIC IMPACT	SUMMARY	ASSESSMENT
		construction impact, it does provide (except for irreplaceable habitats) certainty of reinstatement of habitats back to an appropriate end condition, as a well as a beneficial reduction in the duration and magnitude of the construction effect on habitats and species. The Framework CEMP will set out mitigation proposals required for relevant locations/habitats which are included in the ES. Potential effects on ecology during construction will be managed through the
		implementation of the measures that will be set out in the Landscape and Biodiversity Management Plan and the final CEMP that will be secured by Requirements 4 and 15 of the draft DCO (Document Ref. 4.1). An Ecological Clerk of Works would be present during construction as appropriate to supervise and instruct the implementation of the mitigation measures in the CEMP. Furthermore, options to achieve benefits for biodiversity as a direct consequence of the Proposed Development are set out within the Outline Landscape and Biodiversity Strategy. The detailed proposals for biodiversity enhancement relating to the Proposed Development will be set out in the Landscape and Biodiversity Management Plan (also secured by Requirement 4).
		Chapter 10 'Geology, Hydrology and Contaminated Land' confirms that there are no designated geological interest features within the Site boundary or in its vicinity (e.g. Geological SSSIs). Furthermore, there are no recorded Regionally Important Geological Sites or Locally Important Geological Sites within the Site boundary.
		Section 10.9 of Chapter 10 provides a summary of residual effects of the Proposed Development. Tables 10-14, Table 10-15 and Table 10-16 provides the



GENERIC IMPACT	SUMMARY	ASSESSMENT
		detail of residual effects associated with the construction, operation and decommissioning of the Proposed Development. In conclusion there are not considered to be any residual significant effects on Geology, Hydrology of Contaminated Land associated with the construction, operation and decommissioning of the Proposed Development.
Civil and military aviation and defence interests (EN-1, 5.5)	EN-1, Section 5.5 notes that civil and military aerodromes and aviation technical sites, as well as other types of defence interests can be affected by new energy developments.	The Applicants consulted the Civil Aviation Authority ('CAA'), Defence Infrastructure Organisation ('DIO') and NATS on the proposed Development. A response was received from NATS on both the first and second rounds of consultation dated 15 September 2023 and 13 December 2023 respectively stating that it anticipates no impact from the Proposed Development and has no comments on the application. To date no response has been received from CAA or the DIO.
		The Site lies within the 30km wind farm safeguarding area for Durham Tees Valley Airport (shown on the Policies Map of the RCBC Local Plan), however, this is not considered relevant to the Proposed Development.
		Requirement 23 'Aviation warning lighting' of the draft DCO requires details of aviation warning lighting to be submitted to the relevant local planning authority prior to the commencement of development and for the authority to consult the CAA on those details. The aviation warning lighting must be installed and operated in accordance with the approved details.



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		Requirement 24 'Air safety' requires relevant details to be sent to the Defence Geographic Centre of the MoD prior to the commencement of development so that the Site can be charted for aviation purposes.
and insect	NPS EN-1 acknowledges that the construction/demolition, operation and decommissioning of energy infrastructure has the potential to affect air quality through the release of odour, dust, steam, smoke, artificial light and insect infestation.	Chapter 8 'Air Quality' of the ES Volume 1 addresses the potential impacts and effects on air quality that are to be considered during construction, operation and decommissioning of the Proposed Development. ES Volume III, Appendices N070009/APP/6.4), Appendix 8A: Air Quality – Construction Assessment, is a Technical Appendix in support of Chapter 8 which identifies and proposes measures to address the potential impacts and effects of the Proposed Development on air quality during construction and decommissioning.
	Paragraph 5.7.6 of EN-1 provides advice regarding the assessment of these impacts. It is advised that the	A qualitative assessment of construction dust has been undertaken as described in section 8A.4 of Appendix 8A: Air Quality – Construction Assessment.
	<ul> <li>assessment should describe:</li> <li>the type, quantity and timing of emissions;</li> <li>aspects of the development which may give rise to emissions;</li> <li>premises or locations that may be affected by the emissions;</li> <li>effects of the emissions on identified premises or locations; and</li> </ul>	<ul> <li>The following activities have been screened as potentially significant, based on the nature of construction activities proposed: <ul> <li>earthworks (soil stripping, spoil movement and stockpiling);</li> <li>demolition (removal of existing buildings and infrastructure);</li> <li>construction (including on-site concrete batching); and</li> <li>trackout (Heavy Goods Vehicles (HGV) movements on unpaved roads and offsite mud on the highway).</li> </ul> </li> <li>As the exact details on earthworks area or construction material volumes are not known at this stage, but due to the overall scale of the Proposed Development, a "large" magnitude for all activities is a reasonable assumption.</li> </ul>

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	<ul> <li>measures to be employed in preventing or mitigating the emissions.</li> </ul>	However, most areas away from the Main Site should be treated separately as lower magnitude sites as on-site activities will mainly relate to pipes installation, which as a lower dust production potential, as well as a shorter work time span.
	Paragraph 5.7.12 of EN-1 states that, in decision making, the SoS should be satisfied that an assessment of the potential effects in respect of artificial light, dust, odour, smoke, steam and insect infestation has been carried out; and be satisfied that all reasonable steps have been taken to minimise any detrimental impacts.	The risk assessment for construction dust indicates that there will be a negligible to medium risk of unmitigated dust impacts on human health (PM10) and a low to medium risk of dust impacts on dust soiling from unmitigated demolition (for the pipeline corridors), earthworks, construction and track out activities. The assessment also shows that the impact of unmitigated construction activities on ecological sites is likely to be high. These risk classifications are solely used to select the appropriate schedule of mitigation measures from IAQM guidance.
		However, appropriate mitigation measures for managing these risks will be set out in the Final CEMP which will be secured via a DCO Requirement and will be drafted in accordance with the Framework Construction Environmental Management Plan (CEMP) included in ES Volume III as Appendix 5A: Framework CEMP. Through implementation of these mitigation measures, no significant dust effects are predicted on any sensitive receptors.
		Odour, artificial light, smoke and steam are dealt with in the Statutory Nuisance Statement, which identifies the matters set out at Section 79(1) of the Environmental Protection Act (EPA) 1990 in respect of statutory nuisance and considers if the Proposed Development could result in a nuisance and the measures, where relevant, to prevent and mitigate such nuisance occurring. However, through the embedded mitigation in place and the controls provided



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		for and secured in the DCO, it has been demonstrated that the Proposed
		Development is unlikely to give rise to any statutory nuisance under the EPA 1990.
		Further mitigation for Odour, artificial light, smoke and steam will be embedded within the design of the Proposed Development and mitigation and controls will
		be secured during both construction and operation by a number of
		requirements (Schedule 2 of the draft DCO). These include Requirement 6
		'External lighting'; 15 'Construction environmental management plan'; 19 'Construction hours'; 20 'Control of noise – construction'; and 22 'Restoration of
		land used temporarily for construction'. Furthermore, the operation of the
		Proposed Development would be regulated by the EA through environmental permitting and would undergo regular monitoring and reporting.
Flood risk (EN-1,	Paragraph 5.8.13 of EN-1 requires that	A Preliminary Flood Risk Assessment (FRA) is appended to the ES (Appendix 9A:
5.8; EN-4, 2.3; and EN-5, 2.3)	applications for energy developments of 1 hectare or greater in Flood Zone 1 in	Flood Risk Assessment (Volume III, EN070009/APP/6.4)). The Main Site is located within Flood Zone 1 and some sections of the pipelines are within Flood
	England and all proposals for energy	Zones 2 and 3. The FRA will be used to inform the detailed design of the
	developments located in Flood Zones 2	Proposed Development in terms of surface water management and the
_	and 3 in England should be accompanied by a Flood Risk Assessment ('FRA').	selection of finished floor levels.
		Mitigation measures are described in the FRA include identifying a suitable level
	Similar considerations apply to gas	of the development platform for the Main Site, building the Proposed
	supply pipelines (EN-4, paragraph 2.3.4)	Development using Flood Resistant and Resilient Design standards, a system for
	and in relation to substations that are vital for the electricity transmission and	monitoring flood warnings, and the development of a Flood Emergency Response Plan.



GENERIC IMPACT	SUMMARY	ASSESSMENT
	distribution network (EN-5, paragraph 2.3.2). Applicants should set out how their developments will be resilient to flooding and not result in an increased risk of flooding.	<ul> <li>Although within Flood Zone 1, the Main Site will be designed on a raised platform to provide additional protection from potential climate change effects for critical electrical equipment, such as transformers and switchgear.</li> <li>As flood risk from fluvial sources (Ordinary Watercourses) on the north bank of the River Tees, between Billingham and Seal Sands, will increase for all climate change scenarios, the Hydrogen Distribution Network will be at risk of flooding over the lifetime of the development. However, as most of the pipes making up the Hydrogen Distribution Network will be located above ground and in an existing unattended service corridor is therefore considered acceptable development within Flood Zone 3a.</li> <li>Appropriate mitigation measures are proposed for the construction phase in this area of higher flood risk. These measures will be secured through the final CEMP which will be discharged by DCO Requirement 15, best practice and in consultation with the Environment Agency with regards to maintaining the</li> </ul>
Historic environment (EN- 1, 5.9)	Section 5.9 of EN-1 acknowledges that the construction, operation and decommissioning of energy infrastructure has the potential to result in adverse impacts on the historic environment, above at and below the surface of the ground.	integrity of the flood defences. The potential impact of the Proposed Development upon the historic environment is considered at Chapter 17 'Archaeology and Heritage' of ES Volume I. Chapter 17 deals with cultural heritage and archaeology in respect of the onshore elements of the Proposed Development. This includes archaeology, built heritage and historic landscapes and assesses the potential effects of the Proposed Development during construction, operation and decommissioning.



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	Paragraph 5.9.9 requires applicants to	Section 17.6 of Chapter 17 – 'Impacts and Likely Significant Effects' provides a
	undertake an assessment of any likely significant heritage impacts of the	detailed assessment of individual assets per development stage.
	proposed development as part of the EIA and describe these along with how the mitigation hierarchy has been applied in the ES. This should include consideration of heritage assets above, at, and below the surface of the ground.	There are no designated heritage assets located within the Main Site. As the Main Site has been developed extensively since the late-19th century it is likely to have removed all traces of the breakwater, reclamation wall, jetty and tramway features that appear on 19th century map evidence. These features therefore survive only as documentary evidence on historical maps. They have a level of historic interest as features that are indicative of the area's industrial heritage, but as there are no surviving remains of the features within the Main Site, they have no archaeological interest. Construction of the Proposed
	Paragraph 5.9.10 establishes that as part of the ES the applicant should provide a description of the significance of the heritage assets affected by the proposed	Site, they have no archaeological interest. Construction of the Proposed Development on the Main Site will therefore not affect their historic interest and will therefore result in no impact and no effect.
	development, including any contribution made by their setting. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on their significance.	There are no designated heritage assets located within the Natural Gas Connection Corridor. However, the site of Coatham Iron Works and a former reservoir of the ironworks are located in the eastern section of the Natural Gas Connection Corridor. Based on the desk-based evidence, the remains are assessed to be of local importance and Low value. The construction of the Natural Gas Connection Corridor has the potential to permanently remove a proportion of these remains but will not remove them entirely. This constitutes
	Paragraph 5.9.11 adds that where it is evaluated that a development site has potential to include heritage assets with archaeological interest, an appropriate desk base assessment should be carried	a Medium magnitude of impact, resulting in a Minor Adverse effect which is Not Significant. The Electrical Connection Corridor is situated to the south and immediate east of the Main Site and would result in impacts to the reclamation wall, the site of



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	out. Where such desk-based research is insufficient to properly assess the interest, a field evaluation should be undertaken.	Coatham Ironworks and reservoir and the site of a tramway. As previously discussed, the reclamation wall and tramway have been largely removed from the archaeological record and would not be subject to any impacts or effects. The remains of Coatham Ironworks and former reservoir would be partially
	Paragraph 5.9.12 clarifies that the applicant should ensure that the extent of the impact of the proposed	truncated by construction activities, which would result in a Medium magnitude of impact on assets of Low heritage value, resulting in a Minor Adverse effect, which is Not Significant.
	development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents.	The two Water Connections Corridors largely overlap the Natural Gas Connection Corridor and the Electrical Connection Corridor. There are no designated assets within this work area and impacts from construction will mirror those discussed above.
	Paragraph 5.9.22 states that the SoS should assess the significance of any heritage asset that may be affected by the proposed development, taking account of:	The Hydrogen Distribution Corridor extends across the Tees Valley with the construction type comprising a mixture of above and below ground trenches and trenchless technologies, such as HDD and MBT. The construction of below ground trenches, and the excavation of launch and receptor pits/shafts for HDD and MBT, has the potential to result in permanent impacts to buried archaeological remains that may be present. Above ground elements of the
	<ul> <li>evidence provided with the application;</li> <li>any designation records;</li> <li>historic landscape character records</li> <li>the relevant Historic Environment Records;</li> </ul>	pipeline have the potential to introduce new visual elements to the setting of heritage assets and to the historic landscape. However, the mitigation measures described in ES Chapter 17, comprising a programme of archaeological evaluation and excavation in advance of construction, will ensure that the significant effect is offset to minimise residual significant effects that may occur,

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	<ul> <li>representations made by interested parties; and</li> <li>expert advice</li> </ul>	secured through a WSI and CEMP as part of a DCO Requirements 13 and 15 respectively.
	• expert duvice	Cowpen Bewley itself is a conservation area partially bisected by the Hydrogen Distribution Corridor. The conservation area, although small and arranged in a linear layout, has an open, quiet and rural character due to the large central green which the houses face onto and through which Cowpen Lane passes. The Hydrogen Distribution Corridor will be buried in the area around Cowpen Bewley Conservation Area, which will result in the localised truncation of medieval ridge and furrow associated with the village and surrounding hinterland. It would also result in the temporary removal of small sections of 'important' hedgerows which mark the boundaries of medieval field systems. The truncation of the ridge and furrow, field boundaries and 'important' hedgerows would result in a slight loss in the ability to understand and appreciate the historical significance of the conservation area through changes to its setting. This would result in a Low magnitude impact on this asset of Medium heritage value, resulting in a Minor Adverse effect, which is Not Significant. Notwithstanding this Not Significant effect, the Applicant acknowledges the importance of this feature and intends to restore the ridge and furrow in consultation with the relevant stakeholders.
		It is proposed that the scope of mitigation is discussed with and approved by the Archaeological advisors to RCBC. The methodologies will be set out in a Written Scheme of Investigation (WSI), which will be submitted to RCBC for approval. The WSI will be secured by Requirement 13 'Archaeology' of the draft DCO.



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andscape and /isual (EN-1, 5.10; EN-4, 2.21; and EN-5, 2.9)	Paragraph 5.10.6 of Section 5.10 of EN-1 states that projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.	ES Volume I Chapter 16 'Landscape and Visual Amenity' identifies the potential impacts and effects on landscape character and visual amenity as associated with the Proposed Development. For the purposes of the landscape and visual assessment, the Study Area has been defined based on a combination of Zone of Theoretical Visibility (ZTV) analysis and professional judgement. This concluded that it is highly unlikely that significant effects would be experienced further than 10 km from the Main Site. The Study Area therefore extends 10 km from the Main Site.
	Paragraph 5.10.16 outlines that the applicant should carry out a landscape and visual impact assessment and report it in the ES, including cumulative effects. Paragraph 5.10.19 also clarifies that the applicant should consider landscape and	Based upon the nature of the works required within the Connection Corridors, it is considered highly unlikely that significant effects will be experienced further than 2 km from them. Therefore, a Study Area of 2 km has been applied for the Connection Corridors which include the CO2 Export Connection Corridor, Natural Gas Supply Connection, Hydrogen Distribution Corridor, Electrical Connection Corridor, and Water Connections. For this assessment these are collectively described as the Connection Corridors.
	visual matters in the early stages of siting and design, where site choices and design principles are being established. Paragraph 5.10.35 acknowledges that the scale of energy projects means that they will often be visible across a very wide area. The Secretary of State should judge whether any adverse impact on the landscape would be so damaging	<ul> <li>At a national scale, Natural England provide 159 National Character Area (NCA) profiles. Each profile includes a description of the natural and cultural features that shape the landscape. The Study Area contains three NCA profiles:</li> <li>NE435: NCA Profile:15: Durham Magnesian Limestone Plateau (Natural England, 2013);</li> <li>NE439: NCA Profile: 23 Tees Lowlands (Natural England, 2014); and</li> </ul>



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	that it is not offset by the benefits	NE352: NCA Profile 25: North York Moors and Cleveland Hills (Natural
	(including need) of the project.	England, 2015).
	Paragraph 5.10.37 states that the	No significant adverse landscape effects are anticipated on NCA15 and NCA25 as
	Secretary of State should consider	a result of the Proposed Development. This is due to their distance from the
	whether the project has been designed	Proposed Development combined with a large proportion of the Connection
	carefully, taking account of	Corridors being located within areas influenced by existing industrial
	environmental effects on the landscape and siting, operational and other	development. As such, they were excluded from further assessment.
	relevant constraints, to minimise harm	Although NCA 23 - Tees Lowland has a Medium classification for both value and
	to the landscape, including by	sensitivity it is concluded that the broad open plain is influenced heavily by large
	appropriate mitigation.	areas of conurbation and industrial development around the Tees Estuary,
		within the east of the NCA. Susceptibility to change arising from the Proposed
	EN-4 paragraphs 2.21.26- 2.21.29 note	Development is therefore considered to be Low.
	that the effects of gas supply pipelines	
	on the landscape will generally be	Table 16.4: Landscape Sensitivity Assessment in ES Volume I Chapter 16
	temporary and long-term impacts are	'Landscape and Visual Amenity' provides a summary assessment of the
	likely to be limited as the infrastructure	sensitivity of each landscape receptor including National and Marine Character
	is usually buried. Impacts are likely to	Areas as well as Local Landscape Character areas.
	include limitations on the ability to	
	replant landscape features such as	The assessment has determined that the Proposed Development is unlikely to
	hedgerows or deep-rooted trees over or	result in significant adverse landscape effects during any of the assessment
	adjacent to the pipeline, the route of the	scenarios.
	pipeline clearly discernible in the	
	landscape as a result of soil disturbance	The 'visual amenity assessment', does identify that the Proposed Development
	and altered drainage patterns producing	will result in a small number of recreational receptors associated with the



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	changes to vegetation cover and	England Coastal Path (Viewpoint 7) and Redcar Seafront (Viewpoint 8)
		experiencing significant short-term adverse visual effects during the
	identify the pipeline route and provide it	construction stage, as a result of the proximity to the Main Site and the limited
	with service access.	intervening vegetation. These effects will also be significant during the
	EN-5 paragraph 2.9.14 requires	operational stage along the England Coastal Path (Viewpoint 7) due to the proximity and prominence of structures associated with the Proposed
	applicants to give appropriate	Development. However, this is an industrial location, which already exhibits
	consideration to undergrounding	large scale industrial development, and for which more development is planned,
	electrical connections as a way of	notably at Teesworks, including the NEP infrastructure. Furthermore, it is
	mitigating landscape and visual impacts.	considered that the significant benefits of the Proposed Development outweigh
		its limited landscape and visual effects.
		In designing the Proposed Development, the Applicants have sought to
		minimise its landscape and visual effects. This has included seeking to
		consolidate the built form at the Main Site where possible, with the main
		buildings and structures set well back from the site boundaries. Appropriate
		materials and colours will also be selected and used for the external finishes of
		the buildings/structures in order to minimise landscape and visual effects. The
		details of these will be secured through Requirement 3 'Detailed design' of the draft DCO.
		Furthermore, Requirement 4 "Landscape and Biodiversity Management Plan "
		of the draft DCO will secure the details of landscaping associated with the
		Proposed Development.



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Land use	EN-1 notes at Section 5.11 that energy	The Proposed Development comprises largely existing or former industrial land.
including open	infrastructure Proposed Developments	The Main Site is located on part of the former Redcar Steelworks (the Foundry).
space, green	will have direct effects on the existing	Section 6.5 of Chapter 6 'Design Evolution and Alternatives' of ES Volume I sets
infrastructure	use of the proposed site and may have	out the selection approach that has been taken for the location of the Main Site.
and Green Belt	indirect effects on the use, or planned	
(EN-1 <i>,</i> 5.11)	use, of land in the vicinity for other types	The hydrogen distribution corridors largely follow existing pipeline corridors that
	of development.	cross existing or former industrial land. The routing of the distribution corridors
		has sought to avoid sensitive receptors and minimise impacts on these. Section
	Paragraph 5.11.3 recognises that it may	6.7 of Chapter 6 'Design Evolution and Alternatives' of ES Volume I sets out the
	not be possible for many forms of	approach that has been taken to the routing of the connection corridors.
	energy infrastructure to be sited on	
	previously developed land,	To mitigate the land loss associated with Cowpen Bewley Woodland Park, for
		sections of the pipeline, trenchless methods of construction will be used to
	Paragraph 5.11.8 requires the applicants	avoid the removal of any existing trees. Therefore, there will be a line of trees
	ES to identify existing and proposed land	between the railway and the AGI which are left intact throughout construction,
	uses near the project, any effects of	providing some visual screening of the activities north of the railway.
	replacing an existing development or use	There is a section of pipeline at normal depth of cover which runs into the AGI,
	of the site with the proposed project or	approximately 40m in length. This section of pipeline will be installed by open
	preventing a development or use on a	cut methods, which will require a cleared route which will be approximately
	neighbouring site from continuing.	30m wide. To do this, vegetation and trees will be removed. Topsoil will be
		stripped; however, this will be stored locally, then replaced after the pipeline is
	Paragraph 5.11.19 requires applicants to	lowered and backfilled. Using the expected length and width, the total area of
	safeguard any mineral resources on the	cleared vegetation for the open cut pipeline easement is 480m <sup>2</sup> , which will be a
	proposed site as far as possible, taking	permanent change to the area. The AGI itself will cover an area of 607m <sup>2</sup> .
	into account the long-term potential of	
	the land use after any future	
	decommissioning has taken place.	



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		There are multiple existing pipeline easements around the existing AGI which are cleared of large vegetation, which form natural walking routes. After the completion of the construction period, the hydrogen pipeline easement will form a similar natural walking route through Cowpen Bewley Woodland Park. Public access to the woodland immediately surrounding the existing AGI is expected to be limited during construction due to the nature of the work (i.e. construction safety).
		The Applicant intends to mitigate the permanent loss of open space at Cowpen Bewley Woodland Park with a replacement area of land that would be of at least the same size and standard as the land required by the project. This will downgrade the magnitude of impact of the Proposed Development on PRoW and Open Space in the construction phase to Low. Overall, the residual effect of the Proposed Development on PRoW and Open Space is assessed to be Minor Adverse (Not Significant) as a result. The Applicant will work with Stockton-on- Tees Borough Council to agree the layout and planting of this land.
		In addition to the above, the Applicant has devised an Outline Landscape Biodiversity Management Plan (LBMP) to ensure that any biodiversity loss is reduced and mitigated as much as possible to ensure minimal impacts on socio- economic receptors as a result of the Proposed Development. The proposed measures include the reinstatement and enhancement of bankside vegetation and woodland planting as compensatory habitat for the loss of public open space within Cowpen Bewley Woodland Park. This will mitigate both the socio- economic and land use effects and the loss of biodiversity through the loss of open space at this site.



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		Sand and gravel, limestone, potash, salt, gypsum/anhydrite and coal are widespread across the Tees Valley. These minerals resources are both shallow and deep and in many cases are subject to safeguarding in the Joint Minerals and Waste DPD. Much of the land upon which the Proposed Development is located is identified as being within an area that is identified for salt and gypsum.
		The Proposed Development will not sterilise local mineral resources, notably salt and gypsum. These mineral resources are present at depth below the Main Site and parts of the distribution corridors. Some of these areas, including the Main Site are already covered by existing industrial development. The Proposed Development does not therefore alter or preclude the ability to access these minerals for future extraction. It is therefore considered that the risk to mineral resources considered is negligible (Chapter 10 'Geology, Hydrogeology & Contaminated Land, ES Volume I).
		Given this, it is considered that the Proposed Development would have an overall positive economic effect on the Middlesbrough and Stockton TTWA economy through the provision of employment and through associated multiplier effects and combined with the need for the Proposed Development and the benefits that it will bring, outweigh any minerals, green infrastructure, PRoW and open space considerations.



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Noise and vibration (EN-1, 5.12; EN-4, 2.21; and EN-5, 2.9)	<ul> <li>Paragraph 5.12.6 of EN-1 (Section 5.12) states that where noise impacts are likely to arise from the proposed development, the applicant should include the following in the noise assessment: <ul> <li>a description of the noise generating aspects of the development proposal leading to noise impacts,</li> <li>identification of noise sensitive receptors and noise sensitive areas that may be affected</li> <li>the characteristics of the existing noise environment</li> <li>a prediction of how the noise environment during the construction period, during the construction period, during the operating life of the infrastructure and at particular times of day.</li> <li>an assessment of the effect of predicted changes in the noise environment on any noise-sensitive receptors</li> </ul> </li> </ul>	<ul> <li>Chapter 11 'Noise and Vibration' of ES Volume I presents the assessment of potential noise and vibration impacts and effects of the Proposed Development. In particular, it considers potential impacts on identified receptors in terms of: <ul> <li>predicted noise and vibration levels during the construction works associated with the Proposed Development;</li> <li>predicted changes in road traffic noise levels on the local road network during the construction stage; and</li> <li>predicted noise resulting from operation of the Proposed Development.</li> </ul> </li> <li>Adopting a 'worst case scenario' approach, key Noise Sensitive Receptor (NSR) locations considered to be representative of the nearest and likely most sensitive existing receptors to the Proposed Development have been identified and selected. Table 11 2: Key Representative Noise Sensitive Receptors in Chapter 11 of ES Volume 1 provides a list and description of each NSR.</li> <li>Construction noise effects at all receptors during construction works at the Main Site are predicted to be Negligible (Not Significant) during the daytime period due largely to the distances between the works and NSRs.</li> <li>There is the potential for Moderate and Major Adverse (Significant) noise effects during daytime Connection Corridor construction at the following NSRs:</li> <li>NSR H1 (Manor House Farm, Cowpen Bewley, Billingham) during the daytime for trenchless construction and ROW Fencing; and</li> </ul>

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	adverse effects on health and quality of life	<ul> <li>NSR H4 (Seal Sands Office, Stockton-on-Tees) during the daytime for above ground Pipeline Construction, ROW Fencing and Street Works.</li> </ul>
	Paragraph 5.12.7 goes on to state that the nature and extent of the noise assessment should be proportionate to the likely noise impact.	However, the construction noise level predicted for the Proposed Development during construction of the pipeline, will be for a short period of time thus reducing the likelihood of significant effects.
	EN-4, Section 2.21 deals with the noise and vibration effects of gas supply	Otherwise, all Connection Corridor construction effects are Minor or Negligible adverse (Not Significant) during the daytime.
	pipelines. Paragraphs 2.21.18-2.21.20 note that there will be noise and possibly vibration effects during the pre- construction and construction stage and	Comparison of the predicted daytime noise levels for construction on the Main Site against the construction noise limits for evening and weekend working indicate Negligible effects (Not Significant) for all NSRs.
	also possibly during commissioning as a result of drying after hydrotesting and using air compressors. A new gas	There is the potential for Moderate and Major Adverse (Significant) noise effects during evening and weekend Connection Corridor construction at the following NSRs:
	pipeline (paragraph 2.21.21) may require an above ground installation.	• At NSR H1 (Manor House Farm, Cowpen Bewley, Billingham) for buried pipeline construction methods, Testing and Street Works and, during
	EN-5 (paragraph 2.9.40) states that for assessment of noise from overhead lines, the applicant must use an appropriate method to determine the sound level	<ul> <li>Saturday 13:00 to 16:00 for ROW Fencing and Prep; and</li> <li>At NSR H3 (Kirkleatham Village) for above ground pipeline construction methods (only Saturday 13:00 to 16:00).</li> </ul>
	produced by the line in both dry and wet weather conditions, in addition to	Otherwise, all Connection Corridor construction effects are Minor or Negligible adverse (Not Significant) during the evening and weekend.



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	assessing the impact on noise-sensitive receptors.	Table 11.50 – 'Changes in Road Traffic Noise due to the Construction of the Proposed Development' in Chapter 11 'Noise and Vibration' of ES Volume I shows either no change or very low change in road traffic noise due to traffic
		flows along the construction traffic routes of the Proposed Development. This will result in Negligible Adverse (Not Significant) effects at local residential NSRs. Based upon the above, no further specific mitigation measures are proposed in
		addition to those as detailed in Section 11.5 – 'Proposed Development Design and Impact Avoidance'.
		For the NSRs assessed for operational noise (H4, H5 and H6), there are other industrial sound sources closer than the Proposed Development Site. The predicted sound levels produced by the Hydrogen Production Facility are below the existing Background Sound Levels at NSR H4 and NSR H6 as shown in Table 11-52 of Chapter 11 and at NSR H5 below the existing ambient sound levels for both day and night. It is therefore not expected that noise from operation of the Hydrogen Production Facility will be distinctive above the residual acoustic environment at these NSRs.
		As the full details of the decommissioning of the Hydrogen Production Facility are uncertain at this time, the assessment of the decommissioning has been undertaken using the same methodology as the construction assessment.
		During decommissioning of the Main Site, Negligible (Not Significant) noise effects are predicted during the daytime. If the decommissioning work were to be undertaken during the evening/weekend, at the same intensity as the daytime activities, Negligible (Not Significant) effects would be expected at all
		NSRs. If decommissioning works were to be undertaken during the night-time,



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		at the same intensity as the daytime activities, Minor Adverse (Not Significant) effects at NSR H5, and Negligible (Not Significant) effects at NSR H6 would be expected.
		The CEMP, which is secured by Requirement 15 of the draft DCO will include a number of measures to control noise and vibration effects during construction. Further controls on noise and vibration will be secured by Requirements 19 'Construction hours' and 20 'Control of noise – construction'.
Socio-economic (EN-1, 5.13)	Paragraph 5.13.1 of EN-1 acknowledges that the construction, operation and decommissioning of energy infrastructure may have socio-economic impacts at local and regional levels.	Chapter 18 'Socio Economics and Land Use' of ES Volume 1 identifies the potential impacts and effects on socio-economics and land use that are to be considered as part of the Environmental Impact Assessment (EIA) of the Proposed Development.
	Paragraph 5.13.2 requires that where the project is likely to have socio- economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts as part of	For socio-economics, there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is recognised that 'significance' reflects the relationship between the scale of impact (magnitude) and the sensitivity (or value) of the affected resource or receptor. As such, the significance criteria for socio-economic effects have been assessed by relying on the following considerations:
	Paragraph 5.13.4 outlines additional socio-economic impacts to be considered:	• the sensitivity of a given receptor: the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor, particularly their ability to respond to change based on the given impacts of the Proposed Development; and

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	<ul> <li>"the creation of jobs and training opportunities. Applicants may wish to provide information on the sustainability of the jobs created, including where they will help to develop the skills</li> </ul>	<ul> <li>the magnitude of the impact: this entails consideration of the size of the impact on people, businesses, users of PRoWs, private properties, employees and development land in the context of the area in which impacts will be experienced.</li> <li>These factors have then been combined to determine the consequent</li> </ul>
	needed for the UK's transition to	significance of the effect.
	<ul> <li>Net Zero;</li> <li>the contribution to the development of low-carbon industries at the local and regional level as well as nationally;</li> <li>the provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;</li> <li>any indirect beneficial impacts for the region hosting the infrastructure, in particular in relation to use of local support services and supply chains;</li> <li>effects (positive and negative) on tourism and other users of the area impacted;</li> </ul>	Duration of effect is also considered, with more weight given to permanent changes than to temporary ones. Permanent effects are generally those associated with the completed Proposed Development. Temporary effects are those associated with the construction and decommissioning works, but they could also occur in the operational stage. For the purposes of this assessment, short-term effects are of one year or less, medium-term effects of one to five years and long-term effects are for effects with a duration over five years. During the construction stage It is estimated that there would be a peak construction workforce at between 800 and 1,300. This includes workers associated with both the Main Site and Connection Corridors. Of these jobs, around 585 are expected to be from the Middlesbrough and Stockton travel to work area ('TTWA'). It is estimated that these 780 net additional construction jobs would generate £38.1m GVA per annum during the construction phase, of which £28.6m will be generated by the 585 jobs in the Middlesbrough and Stockton TTWA. This results in a medium-term, temporary Moderate Beneficial (Significant) effect.



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	<ul> <li>the impact of a changing influx of workers during the different construction, operation and decommissioning stages of the energy infrastructure. This could change the local population dynamics and could alter the</li> </ul>	Taking into account the cumulative construction employment opportunities realised through other planned projects within the Zone of Influence (ZoI), being the Middlesbrough and Stockton TTWA, the potential cumulative socio- economic effects is High and the sensitivity of the receptors is High. Therefore, this results in a Major Beneficial (Significant) cumulative construction worker effect.
	demand for services and facilities in the settlements nearest to the construction work (including community facilities and physical infrastructure such as energy, water, transport and waste). There could also be effects on	It is estimated that during operation there would be 58 net jobs created, with 44 of these filled by residents of the Middlesbrough and Stockton TTWA. Using the latest Gross Value Added (GVA) per filled job data for the North East region as a proxy for productivity, it is estimated that the 58 net additional construction jobs will generate £2.8 m GVA per annum in this stage, of which £2.1 m will be generated by the 44 jobs in the Middlesbrough and Stockton TTWA (ONS, 2023a).
	social cohesion depending on how populations and service provision change as a result of the development; and	In summary the following significant cumulative effects are anticipated in the construction stage:
	<ul> <li>cumulative effects - if development consent were to be granted to for a number of projects within a region and these were developed in a similar</li> </ul>	<ul> <li>Employment – Major Beneficial (Significant);</li> <li>Impacts of Construction Employment on Local Housing Market and Local Services – Moderate Adverse (Significant); and</li> <li>Demographic effects and Community Disruption – Moderate Adverse (Significant).</li> </ul>
	timeframe, there could be some short-term negative effects, for example a potential shortage of	The Applicant is committed to working with the promoters of other cumulative schemes to mitigate and reduce the effect of the cumulative construction



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	construction workers to meet the needs of other industries and major projects within the region."	workforce as far as possible. This includes setting up a working group for the Proposed Development and other cumulative developments in order to communicate and co-ordinate construction works at the individual developments in order to reduce any issues created by the additional construction workforce in the vicinity of the respective cumulative developments.
	Paragraph 5.13.9 states that the Secretary of State should have regard to the potential socio-economic impacts of new energy infrastructure identified by the applicant and from any other sources that the Secretary of State considers to be both relevant and important to its decision.	Given the lack of information available for the decommissioning stage, the cumulative effects of the decommissioning stage have not been assessed at this time. Notwithstanding any potential adverse effects, it is considered that the Proposed Development would have an overall positive economic effect on the Middlesbrough and Stockton TTWA economy, through the provision of employment and through associated multiplier effects.
		Requirement 26 of the draft DCO will secure an Employment, skills and training plan, to be agreed with RCBC, STBC and HBC, to maximise the local employment and training opportunities provided by the Proposed Development.
Traffic and transport (EN-1, 5.14;	EN-1 (paragraph 5.14.5) requires the applicant to undertake a transport appraisal if a project is likely to have significant transport implications.	Chapter 15 'Traffic and Transport' of ES Volume I addresses the potential effects of the Proposed Development on traffic and transport. This chapter has been informed by the Transport Assessment, the Framework Construction Traffic Management Plan and the Framework Construction Worker Travel Plan which can be found in the ES Volume III: Appendices.



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	Paragraph 5.14.7 requires that the applicant prepare a travel plan, including demand management and monitoring measures to mitigate transport impacts. Details of proposed measures to	The assessment has been prepared in line with the Rochdale Envelope approach on a worst-case and makes no allowance for the delivery of construction materials of items of plant or equipment by water or rail. However, the appointed Contractor(s) would be expected to review options for the use of rail and water when sourcing construction materials, and particularly for the
	improve access by active, public and shared transport should also be addressed.	movement of any Abnormal Indivisible Loads (AILs) by sea. It has been assumed that they could potentially be delivered by ship to the Redcar Bulk Terminal (RBT) and transported to the Main Site via the Teeswork internal road network which would further reduce any potential traffic and transport impacts.
	Paragraph 5.14.21 recommends that the "Secretary of State should only consider refusing development on highways grounds if there would be an unacceptable impact on highway safety,	The construction programme for the Proposed Development, on which the assessment is based, can be found in ES Volume I, Chapter 5: 'Construction Programme and Management'.
	residual cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision."	Section 15.6 of Chapter 15 provides the assessment of the likely impacts and effects during the construction stage. The main impact will be during the construction stage that will last for around 60 months, commencing in 2025, with 2026 being the predicted peak year of construction. The additional traffic predicted to be generated by the construction of the Proposed Development will result in a small temporary increases of traffic flows, including HGVs, on the roads leading to the Main Site and the Connection Corridors north and south of the River Tees.
		In line with the significance criteria presented in Chapter 15 and in the TA, the effects of construction traffic on all road sections and junctions are anticipated to be negligible to minor and therefore not significant. Notwithstanding this, a



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		number of traffic management measures will be implemented during the
		construction stage to further minimise traffic impacts upon the local road
		network (see Section 15.5 of Chapter 15).
		The Planning Inspectorate in the Scoping Opinion states that the operational
		traffic movements are not likely to result in significant effects and an
		assessment of this matter can be scoped out of the ES, with agreement from the
		relevant Highways Authority. The applicant has however in Section 15.6 of
		Chapter 15 done an assessment of potential impacts which concludes that the
		overall transportation effects during the operation of the Proposed
		Development are not considered to be severe.
		Detailed information regarding the decommissioning of the Proposed
		Development is yet not available, given that its design life is 25 years. However,
		the operational life could be longer subject to market and plant condition.
		Based on the information currently available it is expected that traffic due to
		decommissioning would be Negligible, and that overall, the effects of
		decommissioning traffic would be no greater than that of construction traffic.
		Notwithstanding this, a DTMP would be implemented during the
		decommissioning stage to control the impact and routing of HGVs, this is
		secured via Requirement 28 in the draft DCO.
		The residual effects for the construction, operational and decommissioning
		stages of the Proposed Development (taking account of mitigation) are
		predicted to be negligible adverse (not significant).



GENERIC IMPACT	SUMMARY	ASSESSMENT
		Requirement 18 of the draft DCO will secure a Construction Traffic Management Plan (CTMP) which form part of the proposed mitigation for traffic and transport effects.
Resource and Waste management (EN-1, 5.15)	Paragraph 5.15.8 of EN-1 states that the applicant should set out the arrangements that are proposed for managing any waste produced and prepare a report that sets out the	Chapter 21 of the ES – Materials and Waste identifies the potential impacts and effects on materials and waste as part of the Environmental Impact Assessment (EIA) of the Proposed Development. Only a very small area of the Proposed Development Site lies within the
	sustainable management of waste and use of resources throughout any relevant demolition, excavation and construction activities.	safeguarded wharf at Tees Dock and safeguarded waste site at New Road. Works in these areas are unlikely to be required and would not adversely or substantially impact access to the sites. The sites would not be sterilised by the development or render the sites inaccessible for future use.
	Paragraph 5.15.14 states that the Secretary of State should consider the extent to which the applicant has proposed an effective system for managing hazardous and non-hazardous waste arising from the construction, operation and decommissioning of the proposed development.	A high-level estimate of construction waste (excluding demolition and excavation) has been calculated using best practice benchmarks. Waste generation by the Proposed Development is expected to be at the lower end of the scale, since much of the capital expenditure will be associated with modular process engineering components which will be manufactured off-site, hence the on-site waste generation from assembly of these components is expected to be relatively small.
	Paragraph 5.15.15 states the SoS should be satisfied that:	Based on the above the total non-hazardous and inert construction waste for from the Proposed Development is estimated at 37,840 m3 (construction waste) plus 170,067 m3 per year. A worst-case scenario where all waste is disposed of to landfill has been applied. This volume equates to 0.05% of the 83.6 million m3 of inert and non-hazardous landfill capacity within the waste management

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GENERIC IMPACT	SUMMARY	ASSESSMENT
	<ul> <li>any such waste will be properly managed, both on-site and offsite.</li> <li>The waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, or is likely to be, available. Such waste arisings should not have an adverse effect on the Capacity of existing waste management facilities to deal with other waste arisings in the area.</li> <li>adequate steps have been taken to minimise the volume of waste arisings, and of the volume of waste arisings sent for recovery or disposal, except where that is the best overall environmental outcome.</li> </ul>	<ul> <li>Expansive Study Area (the Yorkshire and the Humber and North East regions).</li> <li>However, a large proportion of non-hazardous and inert waste from the Proposed Development is likely to be recycled or recovered (e.g. sent for energy recovery) rather than disposed of to landfill.</li> <li>Based on the worst-case scenario, construction of the Proposed Development is estimated to result in less than a 1% reduction of landfill capacity within the non-hazardous waste management Expansive Study Area on an annual basis.</li> <li>This is considered to be negligible resulting in a Slight Adverse (Not Significant) effect on existing waste management facilities.</li> <li>The Applicant will require that the appointed contractor produces and maintains a final CEMP to control site activities to minimise any impact on the environment. The final CEMP will include industry best practice measures, and specific measures set out in the ES in accordance with the Framework CEMP (Volume III – Appendix 5A).</li> <li>In order to further manage and monitor waste generated on the Site during construction, a Framework Site Waste Management Plan (SWMP) has also been developed as part of the Framework CEMP, which allows for waste streams to be estimated and monitored and goals set with regards to the waste produced.</li> <li>The SWMP will require that the contractor segregates waste streams on-site, prior to them being taken to a waste facility for recycling or disposal. All waste removal from the Site will be undertaken by licensed waste carriers and taken to permitted waste facilities.</li> </ul>



GENERIC IMPACT	SUMMARY	ASSESSMENT
		The final CEMP will be secured by Requirement 15 of the draft DCO.
Water quality and resources (EN-1, 5.16; and EN-4 2.21)	Paragraph 5.16.3 of EN-1 (Section 5.16) states that, where a Proposed Development is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water	Chapter 9 of the ES identifies the potential impacts and effects of the construction, operation, and decommissioning of the Proposed Development on the surface water environment, flood risk and water resources. The scope of the assessment includes water quality, water resources, hydromorphology, flood risk and drainage.
	resources and physical characteristics of the water environment, and how this might change due to the impact of climate change on rainfall patterns and consequently water availability across the water environment, as part of the ES.	For the purposes of this assessment, a Study Area of 1 km around the Proposed Development Site has been considered to identify surface water features that could reasonably be affected by the Proposed Development. The assessment of the likely significant effects is qualitative, and considers construction, operational and decommissioning stages of the Proposed Development, as well as cumulative effects with other developments.
	Paragraph 5.16.14 states that the SoS should be satisfied that Proposed Developments have regard to the River Basin Management Plans and meet the requirement of the Water Framework	The Study Area is not within a Nitrate Vulnerable Zone, Drinking Water Protected Area (Surface Water), Drinking Water Safeguard Zone or near any Source Protected Zones. Data provided by the Environment Agency for the Proposed Development indicates that there are 27 licensed water abstractions within the Study Area
	Directive and related directives. Paragraph 5.16.16 states that the Secretary of State should consider proposals to mitigate adverse effects on the water environment and any	Mitigation and Enhancement Measures to be implemented as part of the Proposed Development during the Construction, Operational and Decommissioning stages are described in Section 9.7 of Chapter 9.



GENERIC IMPACT	SUMMARY	ASSESSMENT
	enhancement measures put forward by	For the construction stage of the Proposed Development mitigation will include
	the applicant and whether appropriate	the adoption of the Framework CEMP which will include the final WMP, setting
	requirements should be attached to any	out a water quality monitoring programme. This will need to be further
	development consent and/or planning	developed by the EPC Contractor(s) in consultation with the Environment
	obligations are necessary.	Agency (due to works potentially impacting flow in a Main River and WFD water
		bodies), the LLFA (due to works potentially impacting flow in an Ordinary
	EN-4, Section 2.21 deals with water	Watercourse), the MMO and potentially Natural England pursuant to DCO
	quality and resources relating to gas	Requirements or, where necessary, during the process of obtaining
	supply pipelines. It notes (paragraph	Environmental Permits / Consents / Licences for works affecting, or for
	2.21.37) that the construction of	temporary discharges to, water bodies during the construction period.
	pipelines creates corridors of surface	
	clearance and excavation that can	For the Operational stage a number of additional mitigation strategies will be
	potentially affect watercourses, aquifers,	required to ensure the operation of the Hydrogen Production Facility is
	water abstraction and discharge points,	maintained in the event of an extreme flood or significant pollution event. This
	areas prone to flooding and ecological	will include a Flood Emergency Response Plan and an Emergency Response Plan.
	receptors. Pipeline impacts could	The need for long term water quality monitoring will be set out and agreed with
	include inadequate or excessive	the Environment Agency through the environmental permitting process.
	drainage, interference with groundwater	Enhancement during the Operational stage could deliver certain benefits to the
	flow pathways, mobilisation of	water environment over the existing situation, for example, through an
	contaminants already in the ground, the	improved drainage system compared to the existing site, utilising SuDS to
	introduction of new pollutants, flooding,	improve the water quality of runoff that enters the Tees Estuary waterbody.
	disturbance to water ecology, pollution	
	due to silt from construction and	Mitigation of adverse impacts on the water environment during the
	disturbance to species and their	decommissioning phase will be achieved principally through embedded
	habitats. Impacts during construction	measures as identified in Section 9.5, notably the adoption of a DEMP. The
	should be avoided as far as possible	DEMP will include details of how surface water drainage should be managed at



GENERIC IMPACT	SUMMARY	ASSESSMENT
	through route selection or mitigated if unavoidable and ground should be reinstated after construction.	the Proposed Development during decommissioning and demolition. Water quality monitoring required during the decommissioning works would be specified in the DEMP and would be expected to be similar to those described previously in relation to the construction phase.
		The residual effects reported at the end of Chapter 9 take account of embedded mitigation and the implementation of additional mitigation measures as described above.
		No significant adverse residual effects have been identified for the construction, operation or decommissioning stages of the proposed Development.
		Requirement 10 'Surface and foul water drainage' of the draft DCO secures details of temporary surface water and drainage systems, including means of pollution control for the construction stage of the Proposed Development in accordance with the CEMP. The CEMP is secured by Requirement 15. Requirement 12 secures details of a scheme to deal with the contamination of ground water, which is likely to cause significant harm to person or pollution of controlled waters or the environment.

1.1.3 Table 6.2 Technology Specific Considerations is set out below:



# Table 6.2 – Technology Specific Considerations

CONSIDERATION	SUMMARY	ASSESSMENT
Factors influencing site selection by developers EN-1, 4.3, EN-4, 2.2, & EN-5, 2.2)	EN-1 (paragraph 4.3.15) requires that an applicant must provide information about the reasonable alternatives they have studied. This should include an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic	ES Chapter 6 'Need, Alternatives and Design Evolution' sets out a summary of the alternatives that have been considered for the Proposed Development and how the design have evolved. The consideration of alternatives has been undertaken with the aim of avoiding and/or reducing adverse environmental effects (following the mitigation hierarchy of avoid, reduce and, if possible, remedy), while maintaining
	effects and including, where relevant, technical and commercial feasibility.	operational efficiency and cost-effectiveness, considering other relevant matters such as available land and planning policy. No alternatives to hydrogen production have been considered given the need for the low carbon hydrogen production established by EN-1 and confirmed by
	EN-4 (paragraphs 2.2.1 - 2.2.6) sets out various considerations in relation to site selection for gas supply pipelines.	Government energy and climate change policy. Different syngas technologies have, however, been evaluated to identify the preferred option for delivering the Hydrogen Production Facility. The proprietary low carbon syngas technology was selected as the preferred delivery method based on improved
	Paragraph 2.2.1 establishes that factors influencing site selection by applicants for gas supply pipelines are set with each relevant section of EN-4.	energy efficiency and carbon capture rate, lower associated emissions and beneficial safety outcomes through a lower operating temperature. Teesside was selected as the most appropriate location for the Proposed
criteria considered by applicants, ar the weight they give to them, will va	Paragraph 2.2.2 states that the specific criteria considered by applicants, and the weight they give to them, will vary from project to project.	Development due to its incorporation within the ECC as well as the number of potential industrial offtakers to act as customers of the Proposed Development, and the proximity of the NEP high-pressure compression facility and off-shore $CO_2$ export pipeline to the Endurance Store.
	Whilst, paragraph 2.2.6 states that it is for applicants to decide what	The suitability of this site for the Proposed Development is reflected by the Government choosing the Proposed Development as a chosen anchor 'Capture project' within that Cluster to receive prioritised economic support.



applications to bring forward and the	A number of sites within Teesside were then considered by the Applicant for the
government does not seek to direct applicants to particular sites for gas pipelines.	location of the Hydrogen Production Facility. The analysis of potential sites focused on identifying a site that supports the development of a viable blue hydrogen project, which facilitates industrial connectivity and the path to decarbonisation for industry on Teesside. Based on this analysis, the Applicant
EN-5 (paragraphs 2.2.1 - 2.2.7) sets out various considerations in relation to the	
selection of routes and locations for electricity infrastructure. Paragraph 2.2.2 recognises that the general location of such infrastructure is	Section 6.5 of ES Chapter 6 sets out the criteria applied for the site selection process. Section 6.6 provides further information on the assessment criteria that were considered during the evaluation of alternative site layouts.
normally determined by the location of the generating station and existing network infrastructure.	Due to volume and continuous nature of supply of hydrogen to the offtakers, pipeline delivery has been chosen as the most efficient way of delivery when compared to alternatives such as use of road-based tanker transport.
	Section 6.7 of ES Chapter 6 sets out the alternatives selection process and outcomes for the connection corridors. This includes Hydrogen Distribution Corridor, Water Corridors, Electrical Connection Corridor and the CO <sub>2</sub> Export Corridor. The selected routes or current options seek to avoid environmentally sensitive areas and utilise existing established pipeline routes, and/or the least intrusive construction methodologies (e.g. trenchless methods, as opposed to use of open-cut trench techniques) as well as taking into account other factors such as technical and commercial feasibility.
	A number of options were considered for the routeing of the Hydrogen Pipeline Corridor (Work No. 6) to potential offtakers. After the preparation of the EIA Scoping Report (presented within Appendix 1A: Scoping Report (ES Volume III, EN070009/APP/6.4)), the route options were refined, informed by engineering feasibility work, the outcome of environmental studies and consultation with statutory consultees such as Natural England and the Environment Agency (EA).



This included the removal of a number of routeing option to the western extent of the Proposed Development Site, and alternate options for the crossing of Greatham Creek and the River Tees.
The alternative options were removed due to proximity to a passenger railway and also, following consultation with the Environment Agency and Natural England, to avoid interaction with flood defences and environmentally sensitive areas in North Tees. The southern crossing of the Tees by the Hydrogen Pipeline Corridor has been removed due to constraints on routeing and constructability issues.
In addition to connections to potential industrial offtakers at Wilton, North Tees, Greatham and Billingham, the Hydrogen Distribution Network is also being routed to provide connections to the existing Gas Transmission System and Gas Distribution Networks. These connections would enable gas blending into the distribution network and transmission system and a connection to Project Union, the future hydrogen transmission system, and East Coast Hydrogen, its first regional development. East Coast Hydrogen is looking to repurpose existing natural gas pipelines in the area to hydrogen service and the applicant is looking to connect to this infrastructure.
The East Coast Hydrogen Project is being developed by a combination of transmission and distribution network operators, which will necessitate connections to both types of networks. Therefore, the Applicant has sought flexibility in how this connection is delivered to connect to those networks, as those operators work with Government to determine the best technical way to deliver a national hydrogen network and blending, and work with the Applicant to identify the best approach that works for them in light of the constraints of each of their networks and existing AGI locations.



As such, the alternative connection locations being explored (and thus require allowance within the DCO for connecting pipeline corridors to them) include:
<ol> <li>National Gas Grid AGI near Billingham Industrial Park – in addition to a connection to a potential offtaker, a connection to this location could also achieve a connection to Project Union and Natural Gas Transmission System;</li> </ol>
<ol> <li>National Gas Network natural gas AGI at Cowpen Bewley – a connection to this location would achieve a connection to Project Union, Natural Gas Transmission System, and Natural Gas Distribution Network; and</li> </ol>
<ol> <li>Northern Gas Networks AGI off the A178 Seaton Carew Road - a connection to this location would achieve a connection to Natural Gas Distribution Network.</li> </ol>
Owing to the different requirements of transmission and distribution system connections, two combinations of these locations are being explored as options for the scheme in addition to the connection Location 1 (Work No. 6A.1) includes as part of the Billingham Industrial connection. These are:
<ul> <li>Option A - comprising a connection at Location 2 (Work No. 6A.2) above; and</li> <li>Option B - comprising a connection at Location 3 (Work No. 6A.3) above.</li> </ul>
These are represented pictorially in Figure 4-2 (ES Volume II, EN070009/APP/6.3).
The final choice of approach and selection of options will be determined by the development of the Government's policy in relation to Project Union and



		hydrogen blending and how the Distribution and Transmission System Operators re-configure their systems to respond to this. The Applicant will keep engaging with the Distribution Network and Transmission System Operators to ensure connectivity to Project Union and the wider UK hydrogen infrastructure to enable the development of this.
		The pipeline routeing to the Cowpen Bewley AGI also has a number of social, technical, and ecological constraints which the Applicant is considering in taking the design of this route forward.
		The design and definition of the Proposed Development has continued to evolve since scoping and the publication of the PEI Report, which incorporates responses to consultation responses, ongoing discussions with stakeholders (including landowners), ongoing design work and additional survey information. These changes are summarised in Table 6-1, of ES Chapter 6. This table list the reasons for such changes as well as a comparison of the associated environmental effects, which has in most instances reduced, as a result of the alternative selected.
Pipeline Safety (EN-4, 2.21.9 - 2.21.14)	Pipelines need to comply with the Pipelines Safety Regulations 1996, which requires pipelines to be designed, constructed and operated so that the risks are as low as is reasonably	The various pipelines forming part of the hydrogen distribution network will be manufactured and installed so as to fully comply with the Pipeline Safety Regulations 1996 and all other relevant standards to ensure that the risks are ALARP.
	practicable ('ALARP').	Chapter 20 'Major Accidents and Disasters' concludes that all MA&D Risk Events identified during the construction, operation and decommissioning of the Proposed Development would be Tolerable or Tolerable if ALARP (Not Significant). Therefore, the residual effects at this time, based on the information available to date, are deemed Not Significant.



Soil and Geology	Paragraphs 2.21.44 states that applicants	Chapter 10 of the ES – 'Geology, Hydrogeology and Contaminated Land'
(EN-4, 2.21)	should assess the stability of the ground	identifies the potential impacts and effects on geology, hydrogeology and
	conditions associated with the pipeline	contaminated land that have been considered as part of the Environmental
	route and incorporate the findings of	Impact Assessment (EIA) of the Proposed Development.
	that assessment in the ES (see Section	
	4.3 of EN-1) as appropriate.	There are no recorded Regionally Important Geological Sites or Locally
		Important Geological Sites and neither are there any Groundwater Dependent
	Paragraph 2.21.47- 2.21.49 state that the	Terrestrial Ecosystems or Source Protection Zone (SPZ 1 to 3) within 1 km of
	assessment should cover the options	the Proposed Development Site. In addition, there are no Drinking Water
	considered for installing the pipeline and	Groundwater Safeguard Zone within 1 km of the Proposed Development Site.
	weigh up the impacts of the means of	
	installation.	Table 10.2 of Chapter 10 provides a summary of effects during construction,
		operation and decommissioning (taking into account the mitigation measures).
	Where the applicant proposes to use	Section 10.6 provides information on impacts and likely significant effects on
	HDD as the means of installing a pipeline	soils and geology.
	under a National or European Site and	
	mitigating the impacts, the assessment	The geological effects during the construction of the Proposed Development
	should cover whether the geological	would be no worse than Slight Adverse (Not Significant). For mineral
	conditions are suitable for HDD.	resources, which are present at depth below the Main Site and already
		primarily covered by existing industrial development, such resources would
	When considering any application where	not be sterilised by the Proposed Development or render the sites inaccessible
	the pipeline goes under a designated	for future use resulting in the effect being no worse than Slight Adverse (Not
	area of geological or geomorphological	Significant). The Proposed Development Site is largely covered in Made
	interest, the applicant should submit	Ground or in industrial land use with the soils predominantly recorded as
	details of alternative routes, which	Grade 4 or 5 and are Non-Agricultural / Urban. Therefore, the magnitude of
	either bypass the designated area or	impact associated with the loss of such soils (Low value) during the
	reduce the length of pipeline through	construction of the Proposed Development would be considered Negligible,
	the designated area to the minimum	resulting in Slight Adverse (Not Significant) effects.
	-	



possible, and the reasons why they were discounted.	
Paragraph 2.21.50 explains that applicants should consult with the relevant statutory consultees at an early stage.	

## 1.1.4 Table 6.3 is set out below:

# Table 6.3 – Assessment against North East Marine Plan

CONSIDERATION	SUMMARY	ASSESSMENT
Objective 1	Infrastructure is in place to support and promote safe, profitable and efficient marine businesses.	The part of the Proposed Development which falls inside the North East Inshore Plan area comprises the parts of Hydrogen Distribution Corridor which would cross under the River Tees to export to offtakers located to the northern side of the river and the crossing of Greatham Creek below Mean High Water Springs (MHWS), north of the Tees and to the west of the Main Site. The pipelines will be operated to the relevant safety standards and will assist wider industry in their decarbonisation plans and support the development of the hydrogen industry in Teesside.
Objective 2	The marine environment and its resources are used to maximise sustainable activity, prosperity and opportunities for all, now and in the future.	The Proposed Development does not directly use marine resources, however, the assessments presented in the Environmental Statement ('ES') identify the environmental impacts and proposed mitigation, where necessary to reduce environmental effects and maximise sustainable activity. As confirmed above, the Proposed Development will support the decarbonisation of industry in Teesside and development of the hydrogen industry. Both of which will have



CONSIDERATION	SUMMARY	ASSESSMENT
		substantial benefits for the local and regional economy in terms of employment, job creation and regional prosperity.
Objective 3	Marine businesses are taking long-term strategic decisions and managing risks effectively. They are competitive and operating efficiently.	The Purpose of the Proposed Development is to generate and supply low carbon hydrogen for existing businesses on Teesside which would support the long term decarbonisation of existing industry on Teesside and reduce its carbon dioxide emissions, consistent with the Government's objective to decarbonise the UK economy and achieve its legally binding target of net zero greenhouse gas emissions by 2050.
Objective 4	Marine businesses are acting in a way which respects environmental limits and is socially responsible. This is rewarded in the market place.	The Proposed Development does not directly use marine resources, however, the assessments presented in the ES identify the environmental impacts and proposed mitigation, where necessary to reduce environmental effects and maximise sustainable activity. The Proposed Development will respect environmental limits by helping existing heavy industry on Teesside reduce its carbon dioxide emissions, consistent with the Government's objective to decarbonise the UK economy and achieve its legally binding target of net zero greenhouse gas emissions by 2050.
Objective 5	People appreciate the diversity of the marine environment, its seascapes, its natural and cultural heritage and its resources and can act responsibly.	<ul> <li>The Proposed Development has been subject to assessments which are within the public domain, including:</li> <li>Chapter 9 'Surface Water Flood Risk and Water Resources,'</li> <li>Chapter 10 'Geology Hydrogeology and Contaminated Land'</li> <li>Chapter 12 'Ecology and Nature Conservation'</li> <li>Chapter 14 'Marine Ecology'</li> <li>Chapter 16 'Landscape and Visual Amenity'</li> </ul>



CONSIDERATION	SUMMARY	ASSESSMENT
		<ul> <li>Chapter 17 'Cultural Heritage'</li> <li>Chapter 18 'Socio Economics and Land Use'</li> <li>Chapter 20 'Major Accidents and Disasters'</li> <li>Chapter 21 'Materials and Waste Management'</li> <li>Chapter 23 'Cumulative and Combined Effects'</li> </ul>
		which provide context for the ecology and history of the marine area.
Objective 6	The use of the marine environment is benefiting society as a whole, contributing to resilient and cohesive communities that can adapt to coastal erosion and flood risk, as well as contributing to physical and mental wellbeing.	The Proposed Development has been subject to a Flood Risk Assessment (FRA)which is provided at Appendix 9A of the ES. The Hydrogen Distribution Corridor will be buried beneath the River Tee and Greatham Creek and is therefore not susceptible to flooding. The Proposed Development will not result in increased coastal erosion in the North East Inshore Marine Plan Area.
Objective 7	The coast, seas, oceans and their resources are safe to use.	Chapter 20 of the ES 'Major Accidents and Disasters' presents an assessment of the risks of Major Accidents and Natural Disasters that have the potential to arise during the construction, operation and decommissioning of the Proposed Development. The assessment reports that with appropriate mitigation all risks are tolerable or tolerable if as low as reasonably practicable and not considered as significant, thereby identifying the coast, seas, oceans and their resources are safe to use, in parallel to the construction, operation and decommissioning of the Proposed Development.



CONSIDERATION	SUMMARY	ASSESSMENT
Objective 8	The marine environment plays an important role in mitigating climate change.	The purpose of the Proposed Development is to generate and supply low carbon hydrogen to existing businesses on Teesside. The low-carbon hydrogen is envisaged to replace the use of natural gas the Proposed development will help existing heavy industry on Teesside reduce its carbon dioxide emissions, consistent with the Government's objective to decarbonise the UK economy and achieve its legally binding target of net zero greenhouse gas emissions by 2050.
		Chapter 12 of the ES 'Ecology and Nature Conservation' states that the proposed location for the Hydrogen Distribution Corridor is within coastal saltmarsh habitat which typically sequesters large amounts of carbon. However, due to the use of trenchless technologies, such as HDD, there will be no adverse effects on saltmarsh.
Objective 9	There is equitable access for those who want to use and enjoy the coast, seas and their wide range of resources and assets and recognition that for some island and peripheral communities the sea plays a significant role in their community.	The Proposed Development does not adversely affect access or enjoyment of marine area assets. The assessment of impacts on public rights of way is presented in Chapter 18 'Socio-Economics and Land Use' of the ES. This includes footpaths along the coastal path adjacent to the Proposed Development where enjoyment of the coast is an important quality. The assessment confirms that there would be no direct impacts on these Public Rights of Way and indirect adverse effect from the presence of the Proposed Development were assessed as being not significant.
Objective 10	Use of the marine environment will recognise, and integrate with, defence priorities, including the strengthening of international peace and stability and	The Proposed Development will not adversely impact Ministry of Defence activity or assets as infrastructure in the marine area will be buried.



CONSIDERATION	SUMMARY	ASSESSMENT
	the defence of the United Kingdom and its interests.	
Objective 11	Biodiversity is protected, conserved and, where appropriate, recovered, and loss has been halted.	The ES confirms that having taken into account the design and good practice mitigation no significant adverse effects to marine biodiversity from construction, operation (including maintenance) or decommissioning of the Proposed Development are predicted. Furthermore, no significant adverse effects to the distribution of priority species and habitats are predicted.
Objective 12	Healthy marine and coastal habitats occur across their natural range and are able to support strong, biodiverse biological communities and the functioning of healthy, resilient and adaptable marine ecosystems.	There is expected to be no habitat loss in intertidal habitats down to mean low water during the construction, operation or decommissioning of the Proposed Development. Construction of the hydrogen pipeline across the River Tees and Greatham Creek will use trenchless technologies. The impacts on highly mobile species are assessed in Chapter 14 of the ES 'Marine Ecology' along with proposed mitigation to minimise these impacts. No significant adverse effects are predicted.
Objective 13	Our oceans support viable populations of representative, rare, vulnerable, and valued species.	The impacts on protected species are assessed in Chapter 14 of the ES 'Marine Ecology' along with proposed mitigation to minimise these impacts. No significant adverse effects are predicted.
		The Proposed Development is located within close proximity to several priority marine habitats, including Annex I priority habitat 'Mudflats and Sandflats not covered by seawater at low tide', and priority marine species including herring ( <i>Clupea harengus</i> ). Detailed impact assessments conducted in Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2) have identified No Significant Adverse impacts on priority habitats and species.



CONSIDERATION	SUMMARY	ASSESSMENT
NE-INF-1 Infrastructure	Proposals for appropriate marine infrastructure which facilitates land- based activities, or land-based infrastructure which facilitates marine activities (including the diversification or regeneration of sustainable marine industries), should be supported.	Policy NE-INF1 supports appropriate land-based infrastructure which facilitates marine activities including the diversification or regeneration of sustainable marine industries (and vice versa). The land based infrastructure for the Proposed Development facilitates the parts of the Proposed Development within the marine area namely the Hydrogen Distribution Corridor. The land based infrastructure also facilitates the connection into the NEP CO <sub>2</sub> gathering pipeline network, to allow exportation of CO <sub>2</sub> to the offshore storage facility. Additionally, the transportation of Abnormal Indivisible Loads (AILs) during the construction of the Hydrogen Production Facility will be facilitated through local ports, including Redcar Bulk Terminal (RBT).
NE-INF-2 Infrastructure	<ul> <li>(1) Proposals for alternative development at existing safeguarded landing facilities will not be supported.</li> <li>(2) Proposals adjacent and opposite existing safeguarded landing facilities must demonstrate that they avoid significant adverse impacts on existing safeguarded landing facilities.</li> <li>(3) Proposals for alternative development at existing landing facilities (excluding safeguarded sites) should not be supported unless that facility is no longer viable or capable of being made viable for waterborne transport. Landing facilities in the north east inshore marine plan area are</li> </ul>	The Proposed Development will use landing facilities in the North East Inshore Marine Plan Area, notably during the construction phase, but will not interfere with their operation. The Proposed Development will investigate the use ports within the North East Inshore Marine Plan Area to facilitate movement of abnormal indivisible loads (AILs), notably during the construction phase. There is the potential for equipment vendors and fabrication yards to be located overseas, within the UK, or a combination of the two. The nearest commercial port to the Proposed Development Site is Teesport, which could be used for the import of containerised equipment or modular plants if feasible. Additionally, the use of the existing wharf at RBT will be considered for the transportation of AILs. This will be confirmed in the Final CEMP.



CONSIDERATION	SUMMARY	ASSESSMENT
	critical for enabling industries including shipping, tourism, recreation and leisure, construction, aggregates and waste. By protecting existing landing facilities, identifying the difference in safeguarding, NE-INF-2 mirrors similar provisions in terrestrial planning and supports the continued operation of vital existing landing facilities. 1 35 (4) Proposals adjacent and opposite existing landing facilities (excluding safeguarded sites) that may have significant adverse impacts on the landing facilities should demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant.	
NE-CO-1 Co-existence	Proposals that optimise the use of space and incorporate opportunities for co-existence and cooperation with existing activities will be supported. Proposals that may have significant adverse The north east marine plan areas, and in particular the inshore area, are likely to be busier in the	The part of the Proposed Development which falls inside the North East inshore marine plan area comprises a Hydrogen Distribution Corridor which would be buried beneath the River Tees using trenchless technologies, such as HDD. The approach avoids impacts on existing marine area activities. In some instances, there is potential for the Proposed Development to utilise existing infrastructure, such as the use of the NZT outfall, and connection into the NEP CO <sub>2</sub> Export Corridor which would optimise the use of the marine area and provide mutual benefits for both developments.



CONSIDERATION	SUMMARY	ASSESSMENT
	future, and use of the space may become limited. To Co-existence NE- CO-1 impacts on, or displace, existing activities must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant. If it is not possible to mitigate significant adverse impacts, proposals must state the case for proceeding.	
NE-AGG-1 Aggregates	Proposals in areas where a licence for extraction of aggregates has been granted or formally applied for should not be authorised, unless it is demonstrated that the proposal is compatible with aggregate extraction.	The Proposed Development does not interact with designated aggregate extraction areas.
NE-AGG-2 Aggregates	Proposals within an area subject to an Exploration and Option Agreement with The Crown Estate should not be supported unless it is demonstrated that the proposal is compatible with aggregate extraction.	The Proposed Development does not interact with designated aggregate extraction areas.
NE-AGG-3 Aggregates	Proposals in areas of high potential aggregate resource that may have	The Proposed Development does not interact with designated aggregate extraction areas.



CONSIDERATION	SUMMARY	ASSESSMENT
	significant adverse impacts on future aggregate extraction should demonstrate that they will, in order of preference:	
	a) avoid b) minimise c) mitigate - significant adverse impacts on future aggregate extraction so they are no longer significant.	
	If it is not possible to mitigate significant adverse impacts, proposals should state the case for proceeding.	
NE-AQ-1 Aquaculture	Proposals within existing or potential strategic areas of sustainable aquaculture production must demonstrate consideration of and compatibility with sustainable aquaculture production. Where compatibility is not possible, proposals that may have significant adverse impacts on sustainable aquaculture production must demonstrate that they will, in order of preference:	The Proposed Development does not interact with designated aquaculture areas.
	a) avoid	



CONSIDERATION	SUMMARY	ASSESSMENT
	<ul> <li>b) minimise</li> <li>c) mitigate - adverse impacts on</li> <li>sustainable aquaculture production so</li> <li>they are no longer significant.</li> <li>If it is not possible to mitigate</li> <li>significant adverse impacts, proposals</li> <li>should state the case for proceeding.</li> </ul>	
NE-AQ-2 Aquaculture	Proposals enabling the provision of infrastructure for sustainable aquaculture and related industries will be supported.	The Proposed Development will not interact with aquaculture industry in the Tees area.
NE-CAB-1 Cables	Preference should be given to proposals for cable installation where the method of protection is burial. Where burial is not achievable, decisions should take account of protection measures for the cable that may be proposed by the applicant. Where burial or protection measures are not appropriate, proposals should state the case for proceeding without those measures.	The Proposed Development activities do not include the installation of subsea cables.



CONSIDERATION	SUMMARY	ASSESSMENT
NE-CAB-2 Cables	Proposals demonstrating compatibility with existing landfall sites and incorporating measures to enable development of future landfall opportunities should be supported. Where this is not possible proposals will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts on existing and potential future landfall sites so they are no longer significant. If it is not possible to mitigate significant adverse impacts, proposals should state the case for proceeding.	The Proposed Development activities do not include the installation of subsea cables.
NE-CAB-3 Cables	Where seeking to locate close to existing subsea cables, proposals should demonstrate compatibility with ongoing function, maintenance and decommissioning activities relating to the cable.	The Proposed Development does not include subsea cabling, and is not expected to interfere with existing subsea cables in the local area.
NE-DD-1 Dredging and disposal	In areas of authorised dredging activity, including those subject to navigational dredging, proposals for other activities will not be supported unless they are compatible with the dredging activity.	The Proposed Development is located within a navigational dredging area. However, Proposed Development activities are not expected to interfere with dredging activity given that they will pass under relevant watercourses.



CONSIDERATION	SUMMARY	ASSESSMENT
NE-DD-2 Dredging and disposal	Proposals that cause significant adverse impacts on licensed disposal sites should not be supported.	The Proposed Development will not interact with licensed dredging disposal sites.
	Proposals that may have significant adverse impacts on licensed disposal sites must demonstrate that they will, in order of preference:	
	a) avoid b) minimise c) mitigate	
	adverse impacts so they are no longer significant.	
	If it is not possible to mitigate the significant adverse impacts, proposals must state the case for proceeding.	
NE-DD-3 Dredging and disposal	Proposals for the disposal of dredged material must demonstrate that they have been assessed against the waste hierarchy. Where there is the need to identify new dredge disposal sites, including for alternative use sites,	No dredging activities will be carried out by the Proposed Development.



CONSIDERATION	SUMMARY	ASSESSMENT
	proposals should be supported if they conform to best practice and guidance.	
NE-OG-1 Oil and Gas	Proposals in areas where a licence for oil and gas has been granted or formally applied for should not be authorised unless it is demonstrated that the other development or activity is compatible with the oil and gas activity.	The Proposed Development does not interact with geological oil and gas resource extraction.
NE-OG-2 Oil and Gas	Proposals within areas of geological oil and gas extraction potential demonstrating compatibility with future extraction activity will be supported.	The Proposed Development does not interact with geological oil and gas resource extraction.
NE-PS-1 Ports, harbours and shipping	In line with the National Policy Statement for Ports, sustainable port and harbour development should be supported. Only proposals demonstrating compatibility with current port and harbour activities will be supported. Proposals within statutory harbour authority areas or their approaches that detrimentally and materially affect safety of navigation, or the compliance	The Proposed Development is located within the PD Ports Statutory Harbour Authority. The Framework Construction Environmental Management Plan (Document reference 5.12) states that to minimise the impacts on the local highway network, transportation of Abnormal Indivisible Loads (AILs) during construction for the Hydrogen Production Facility using the local ports is proposed. However, the Proposed Development activities are not expected to detrimentally and materially affect safety of navigation, or the compliance by statutory harbour authorities, or have an adverse impact on future opportunity for sustainable expansion The potential transportation of AILs during the construction of the Hydrogen Production Facility will utilise lift on lift off (Geared Vessels), Barges, Roll on



CONSIDERATION	SUMMARY	ASSESSMENT
	the Open Port Duty or the Port Marine Safety Code, will not be authorised unless there are exceptional circumstances. Proposals that may have a significant adverse impact upon future opportunity for sustainable expansion of port and harbour activities, must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they	fabrication yards to be located overseas, within the UK, or a combination of the two. These movements will be facilitated through local ports. The nearest commercial port to the Proposed Development Site is Teesport, which could be used for the import of containerised equipment or modular plants. Additionally, the use of the existing wharf at RBT will be considered for the transportation of AILs. Further details in relation to the use of ports will be provided in the Final CEMP.
	are no longer significant. If it is not possible to mitigate significant adverse impacts, proposals should state the case for proceeding.	
NE-PS-2 Ports, harbours and shipping	Proposals that require static sea surface infrastructure or that significantly reduce under-keel clearance must not be authorised within or encroaching upon International Maritime Organization	The Proposed Development does not involve any static sea surface infrastructure and does not significantly reduce underkeel clearance.



CONSIDERATION	SUMMARY	ASSESSMENT
	routeing systems unless there are exceptional circumstances.	
NE-PS-3 Ports, harbours and shipping	Proposals that require static sea surface infrastructure or that significantly reduce under-keel clearance which encroaches upon high density navigation routes, strategically important navigation routes, or that pose a risk to the viability of passenger services, must not be authorised unless there are exceptional circumstances	The Proposed Development does not involve any static sea surface infrastructure and does not significantly reduce underkeel clearance.
NE-PS-4 Ports, harbours and shipping	Policy NE-PS-4 Ports, harbours and shipping Proposals promoting or facilitating sustainable coastal and/or short sea shipping as an alternative to road, rail or air transport will be supported where appropriate.	See the response to Policy NE-PS-1.
NE-REN-1 Renewables	Proposals that enable the provision of renewable energy technologies and associated supply chains, will be supported.	The Proposed Development does not have an element which would interact with the supply chain for renewable energy installations.
NE-REN-2 Renewables	Proposals for new activity within areas held under a lease or an agreement for lease for renewable energy generation should not be authorised, unless it is demonstrated that the proposed development or activity will not reduce	The Proposed Development does not have an element which would interact with the area held under lease or an agreement for lease for any renewable energy installations.



CONSIDERATION	SUMMARY	ASSESSMENT
	the ability to construct, operate or decommission the existing or planned energy generation project.	
NE-REN-3 Renewables	Proposals for the installation of infrastructure to generate offshore renewable energy, inside areas of identified potential and subject to relevant assessments, will be supported.	The Proposed Development does not contain an offshore renewable energy generation element and is outside areas of identified potential.
NE-HER-1 Heritage Assets	Proposals that demonstrate they will conserve and enhance the significance of heritage assets will be supported. Where proposals may cause harm to the significance of heritage assets, proponents must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - any harm to the significance of heritage assets. If it is not possible to mitigate, then public benefits for proceeding with the proposal must outweigh the harm to the significance of heritage assets	The Scoping Opinion confirmed agreement on scoping out direct impacts to marine heritage assets below the Mean High Water Springs and those located in the River Tees. Chapter 17 of the ES 'Cultural Heritage' assessed indirect impacts to marine culture heritage assets and concluded that no marine assets are situated within the Proposed Development Site and the Proposed Development Site does not contribute to the significance of any marine or underwater assets situated in the River Tees. The pipeline crossing the River Tees will be drilled below the river and above ground installations on the shores will not alter the setting of any assets. As such, the Proposed Development will not result in any impacts to marine or underwater assets through changes to setting.



CONSIDERATION	SUMMARY	ASSESSMENT
NE-SCP-1	Proposals should ensure they are	The landscape and visual effects of the Proposed Development have been
Seascape and		assessed and any associated mitigation measures are presented in Chapter 16
landscape	should not have a significant adverse	'Landscape and Visual Amenity' of the ES.
	impact on the character and visual	
	resource of the seascape and	The parts of the Proposed Development which lie within the North East
	landscape of the area.	inshore marine plan area would be buried and not visible therefore no visual
	The location, scale and design of	impacts on the seascape are anticipated here.
	proposals take account of the	During the construction phase the impacts of the Proposed Development on
	character, quality and distinctiveness of	Marine Character Area 22 'Tyne, Tees and Wear Estuaries and Coastal Waters'
	the seascape and landscape.	was assessed as being negligible adverse due to the introduction of
		construction works adjacent to the coast and river although this would be in
	Proposals that may have a significant	the context of existing large scale industrial development. A minor adverse
	adverse impact on the seascape and	effect was assessed at the East Billingham to Teesmouth LCA, coastal Redcar
	landscape of the area should	flats LCTr and Hartlepool Coastal Fringe LCT for the same reasons.
	demonstrate that they will, in order of	
	preference:	Once operational the Proposed Development, particularly the main site will
	a) avoid	add further development and infrastructure into the existing industrial context
	b) minimise	resulting in a small change at the four landscapes above. The resultant effect
	c) mitigate - adverse impacts so they	was assessed as being similar to those identified during the construction stage.
	are no longer significant.	The assessment concludes that there will be no significant effects on
	If it is not possible to mitigate, the	landscape receptors during the construction and operation of the Proposed
	public benefits for proceeding with the	Development.
	passie serients for proceeding with the	



CONSIDERATION	SUMMARY	ASSESSMENT
	proposal must outweigh the significant	
	adverse impacts, to the seascape and	Chapter 16 also assessed the visual impact of the Proposed Development from
	landscape of the area.	representative viewpoints including several coastal viewpoints where users are typically likely to be involved in activity which includes enjoyment of the view.
	Proposals within or relatively close to	The assessment concludes that during the construction phase users at
	nationally designated areas should	viewpoint 7 'England Coast path Warrenby' and viewpoint 8 'Redcar seafront'
	have regard to the specific statutory	would experience moderate adverse (significant) visual effects due to the
	purposes of the designated area. Great weight should be given to conserving	visibility of cranes and construction activity associated with the Main Site.
	and enhancing landscape and scenic	Users at viewpoint 7 would also experience moderate adverse (significant)
	beauty in National Parks and Areas of	visual effects during the operation phase due to the increased massing and
	Outstanding Natural Beauty.	visual prominence of structures at the Main Site.
		Due to the combination of operational constraints, development proximity,
		and scale of the Proposed Development there is no opportunity to deliver
		additional mitigation to reduce the significant visual effects for Viewpoints 7 and 8.
		Although these effects are unavoidable, when weighed against the substantial public benefits of the Proposed Development described in Section 5 of the
		Planning Statement (document ref: 5.2) such as its contribution toward the objectives set out in UK energy and climate change policy and the
		Government's objective of 10 GW of hydrogen production by 2030 to achieve
		the decarbonisation of the power and industrial sectors while promoting economic growth and the development of new green industries. The Proposed
		benefits of the Proposed Development are considered to outweigh the visual impacts on the footpaths.



CONSIDERATION	SUMMARY	ASSESSMENT
NE-FISH-1 Fisheries	Proposals that support a sustainable fishing industry, including the industry's diversification, should be supported.	Chapter 14 of the ES 'Marine Ecology' states that fish and shellfish surveys are not considered necessary because the proposed Hydrogen Distribution Corridor in the vicinity of Greatham Creek and in the River Tees are not considered to be located within fish habitats but may be located within a fish migratory route. However, the use of trenchless technologies has been selected as the most appropriate construction method to avoid any adverse impacts to this receptor.
NE-FISH-2 Fisheries	Proposals that enhance access for fishing activities should be supported. Proposals that may have significant adverse impacts on access for fishing activities must demonstrate that they will, in order of preference:	As stated in response to NE-FISH-1 the proposed Hydrogen Distribution Corridor in the vicinity of Greatham Creek and in the River Tees are not considered to be located within fish habitats but may be located within a fish migratory route. However, the use of trenchless technologies has been selected as the most appropriate construction method to avoid any adverse impacts to this receptor.
	<ul> <li>a) avoid</li> <li>b) minimise</li> <li>c) mitigate - adverse impacts so they are no longer significant.</li> <li>If it is not possible to mitigate significant adverse impacts, proposals should state the case for proceeding.</li> </ul>	
NE-FISH-3 Fisheries	Proposals that enhance essential fish habitat, including spawning, nursery and feeding grounds, and migratory routes, should be supported.	As stated in response to NE-FISH-1 the proposed Hydrogen Distribution Corridor in the vicinity of Greatham Creek and in the River Tees are not considered to be located within fish habitats but may be located within a fish migratory route. However, the use of trenchless technologies has been



CONSIDERATION	SUMMARY	ASSESSMENT
	Proposals that may have significant adverse impacts on essential fish	selected as the most appropriate construction method to avoid any adverse impacts to this receptor.
	habitat, including spawning, nursery and feeding grounds, and migratory routes, must demonstrate that they will, in order of preference:	Other proposed activities will occur within minor tributaries that drain into the River Tees in a limited number of locations. However, an assessment of effects in Chapter 19: Marine Ecology (ES Volume I, EN070009/APP/6.2) on fish determined that no significant effects are expected.
	a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant.	
Employmentin marine-related employment will be supported, particularly where they meet one or more of the following:generate and supply low carbon Hydrogen for exis Teesside. The Proposed Development would facilit industrial emissions in this area and support the e cluster.1) are aligned with local skills strategies and support the skills available 2) create a diversity of opportunities 3) create employment in locations identified as the most deprived 4) implement new technologies - in, and adjacent to, the north east marine plan areas.Chapter 18 'Socio-economics and land use' of the of the potential economic impacts of the Proposed concludes that the Proposed Development would economic effect on the Middlesbrough and Stockt the provision of skilled employment and through a The Proposed Development will be aligned to local diverse opportunities both in the construction and Development but also through supply chain benef	The Proposed Development is for a hydrogen production facility which would generate and supply low carbon Hydrogen for existing industrial offtakers in Teesside. The Proposed Development would facilitate the decarbonisation of industrial emissions in this area and support the establishment of an energy cluster.	
	<ul> <li>and support the skills available</li> <li>2) create a diversity of opportunities</li> <li>3) create employment in locations</li> <li>identified as the most deprived</li> <li>4) implement new technologies - in,</li> <li>and adjacent to, the north east marine</li> </ul>	Chapter 18 'Socio-economics and land use' of the ES contains an assessment of the potential economic impacts of the Proposed Development. The chapter concludes that the Proposed Development would have an overall positive economic effect on the Middlesbrough and Stockton TTWA economy, through the provision of skilled employment and through associated multiplier effects. The Proposed Development will be aligned to local skills providers and create diverse opportunities both in the construction and operation of the Proposed Development but also through supply chain benefits. The draft DCO includes a Requirement that will secure an 'Employment, Skills and Training Plan'.



CONSIDERATION	SUMMARY	ASSESSMENT
NE-CC-1 Climate change resilience and adaptation	Proposals that conserve, restore or enhance habitats that provide flood defence or carbon sequestration will be supported. Proposals that may have significant adverse impacts on habitats that provide a flood defence or carbon sequestration ecosystem service must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant d) compensate for significant adverse impacts that cannot be mitigated.	There will be no direct loss of habitats that provide flood defence or carbon sequestration, including saltmarsh, sand dunes and mudflats (see Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2)). It is anticipated that such habitats may be exposed to indirect effects from the Proposed Development construction activities. However, all indirect effects will be mitigated through the implementation of a Construction Environmental Management Plan and therefore any significant adverse impacts will be avoided.
NE-CC-2 Climate change resilience and adaptation	Proposals in the north east marine plan areas should demonstrate for the lifetime of the project that they are resilient to the impacts of climate change and coastal change.	The Proposed Development has been subject to a Flood Risk Assessment (FRA)which is provided at Appendix 9A of the ES. The Hydrogen Distribution Corridor will be buried beneath the River Tee and Greatham Creek and is therefore not susceptible to flooding or an increased risk of flooding due to climate change. The Proposed Development would support decarbonisation of industry in Teesside and provide resilience against the impacts of climate change.
NE-CC-3	Proposals in the north east marine plan areas, and adjacent marine plan areas, that are likely to have significant	The assessment in Chapter 9: Climate Change (ES Volume I, EN070009/APP/6.2) found that, with mitigation measures in place, there are no significant risks to resilience to climate change. In addition, the Proposed



CONSIDERATION	SUMMARY	ASSESSMENT
Climate change resilience and adaptation	adverse impacts on coastal change, or on climate change adaptation measures inside and outside of the proposed project areas, should only be supported if they can demonstrate that they will, in order of preference:	Development is anticipated to have no significant adverse impacts on coastal change, or on climate change adaptation measures in the local area.
	a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant.	
Policy NE-CCUS-1 Carbon capture, usage and storage	Decommissioning programmes for oil and gas facilities should demonstrate that they have considered the potential for re-use of infrastructure.	The Proposed Development does not contain any decommissioned offshore oil and gas installations or pipelines. However, the captured CO <sub>2</sub> will be further conditioned and compressed and transported to the NEP CO <sub>2</sub> gathering network on the adjacent NZT site before onward transportation by pipeline to the Endurance underground store, located approximately 145 km to the east/south-east of the Proposed Development Site beneath the North Sea.
Policy NE-CCUS-2 Carbon capture, usage and storage	Carbon capture, usage and storage proposals incorporating the re-use of existing oil and gas infrastructure will be supported.	The Proposed Development activities includes a carbon dioxide (CO <sub>2</sub> ) compression facility which will connect to the Northern Endurance Partnership (NEP) CO <sub>2</sub> gathering pipeline network. NEP is an existing project, and although the Proposed Development does not 're-use' existing infrastructure, it will make use of the new infrastructure put in place for NEP.
Policy NE-CCUS-3 Carbon capture, usage and storage	Proposals associated with the deployment of low carbon	The Proposed Development and NEP form part of the East Coast Cluster ('ECC') and the Proposed development was selected by DESNZ as one of the first three projects to connect to the ECC. The Proposed Development will be

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CONSIDERATION	SUMMARY	ASSESSMENT
	infrastructure for industrial clusters should be supported.	one of the UK's largest blue hydrogen production facilities with a capacity of up to 1.2 gigawatts ('GW') thermal, representing more than 10% of the Government's hydrogen production target of 10 gigawatts by 2030. This equates to the production of approximately 160,000 tonnes of low carbon hydrogen per annum, with up to two million tonnes of CO <sub>2</sub> being captured and stored each year. The Proposed Development is consistent with policy NE-CCUS-3, which is supportive of the deployment of low carbon infrastructure on Teesside and in the UK Marine Area.
NE-AIR-1 Air quality and emissions	Proposals must assess their direct and indirect impacts upon local air quality and emissions of greenhouse gases. Proposals that are likely to result in increased air pollution or increased emissions of greenhouse gases must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - air pollution and/or greenhouse gas emissions in line with current national and local air quality objectives and legal requirements.	The effects of the Proposed Development on air quality have been assessed in Chapter 8: Air Quality (Document reference 6.2.8) and indirect effects on the marine environment have been assessed in Chapter 14: Marine Ecology (Document reference 6.2.14). The Proposed Development Activities are expected to have no significant effects (direct or indirect) on the marine environment through changes to local air quality or greenhouse gas emissions. The GHG Impact Assessment has been included within Chapter 19: Climate Change (Document reference 6.2.19). No residual significant effects for the construction, operation or decommissioning of the Proposed Development are anticipated following GHG Impact Assessment, climate change resilience assessment (CCRA) and in-combination climate change impacts (ICCI) assessment and are therefore in line with current national and local air quality objectives and legal requirements



CONSIDERATION	SUMMARY	ASSESSMENT
NE-ML-1 Marine litter	Public authorities must make adequate provision for the prevention, re-use, recycling and disposal of waste to reduce and prevent marine litter. Public authorities should aspire to undertake measures to remove marine litter within their jurisdiction.	The Applicant is not a public authority and as such, this policy is not applicable.
NE-ML-2 Marine litter	Proposals that facilitate waste re-use or recycling to reduce or remove marine litter will be supported. Proposals that could potentially increase the amount of marine litter in the marine plan areas, must include measures to, in order of preference: a) avoid b) minimise c) mitigate - waste entering the marine environment	The Proposed Development does not contain facilities to generate marine waste, however, to manage and monitor waste generated on the Proposed Development Site during the construction, an Outline Site Waste Management Plan (SWMP) has been developed as part of the Framework CEMP which will allow for waste streams to be estimated and monitored. The Outline SWMP sets out how waste will be managed during construction, and opportunities to prevent waste, reuse materials and recycle or recover waste will be explored in accordance with the waste hierarchy.
		The Final SWMP will require that the construction contractor segregates waste streams on-site, prior to them being taken to a waste facility for recycling, recovery or disposal. All waste removal from the Proposed Development Site will be undertaken by fully licensed waste carriers and taken to permitted waste facilities.
		A Final SWMP will be prepared by the construction contractor in accordance with the Outline SWMP prior to construction. The submission, approval, and implementation of the Final SWMP will be secured by a Requirement of the draft DCO.



CONSIDERATION	SUMMARY	ASSESSMENT
NE-WQ-1 Water Quality	<ul> <li>Proposals that protect, enhance and restore water quality will be supported.</li> <li>Proposals that cause deterioration of water quality must demonstrate that they will, in order of preference:</li> <li>a) avoid</li> <li>b) minimise</li> <li>c) mitigate - deterioration of water quality in the marine environment.</li> </ul>	There is the potential for Proposed Development activities to result in a deterioration in water quality, through surface water and chemical run-off, and accidental spills from vessels during construction, and the release of treated effluent into Tees Bay during the operational phase. However, the assessments in Chapter 9: Surface Water, Flood Risk and Water Resources and Chapter 14: Marine Ecology (Document references 6.2.9 and 6.2.14 respectively), taking into account mitigation measures, found that any changes in water quality are expected to be minor and short-term, with rapid dilution. Therefore, both assessments have identified no significant effects to water quality.
NE-ACC-1 Access	Proposals demonstrating appropriate enhanced and inclusive public access to and within the marine area, including the provision of services for tourism and recreation activities, will be supported.	The Proposed Development will not affect access to and within the marine area.
	Proposals that may have significant adverse impacts on public access should demonstrate that they will, in order of preference: a) avoid b) minimise	
	<ul> <li>c) mitigate</li> <li>- adverse impacts so they are no longer</li> <li>significant</li> </ul>	



CONSIDERATION	SUMMARY	ASSESSMENT
NE-TR-1 Tourism and Recreation	Proposals that promote or facilitate sustainable tourism and recreation activities, or that create appropriate opportunities to expand or diversify the current use of facilities, should be supported.	The Proposed Development will not result in any significant adverse impacts to tourism.
	Proposals that may have significant adverse impacts on tourism and recreation activities must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they	
NE-SOC-1 Knowledge, understanding, appreciation and enjoyment	are no longer significant. Those bringing forward proposals should consider and demonstrate how their development shall enhance public knowledge, understanding, appreciation and enjoyment of the marine environment as part of (the design of) the proposal	The Proposed Development has been subject to assessments which are within the public domain, including Chapter 12 'Ecology and Nature Conservation', Chapter 14 'Marine Ecology', Chapter 17 'Cultural Heritage', Chapter 16 'Landscape and Visual Amenity' and Chapter 18 'Socio Economics and Land Use'.
NE-DEF-1 Defence	Proposals in or affecting Ministry of Defence areas should only be authorised with agreement from the Ministry of Defence.	The part of the Proposed Development which falls inside the North East inshore marine plan area comprises a Hydrogen Distribution Corridor which would be buried beneath the River Tees using trenchless technologies, such as



CONSIDERATION	SUMMARY	ASSESSMENT
		HDD. The Proposed Development does not fall within or affect Ministry of Defence assets or interests.
Policy NE-MPA-1 Marine protected areas	Proposals that support the objectives of marine protected areas and the ecological coherence of the marine protected area network will be supported. Proposals that may have adverse impacts on the objectives of marine protected areas must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts, with due regard given to statutory advice on an ecologically coherent network.	The Proposed Development is located adjacent to several MPAs, including Teesmouth and Cleveland Coast SPA/Ramsar, and Teesmouth and Cleveland Coast SSSI. Several other MPAs also have the potential to be affected by the Proposed Development due to the mobile nature of marine species, including Berwickshire and North Northumberland Coast SAC and Southern North Sea SAC. However, an assessment of impacts in ES Chapter 14: Marine Ecology (Document reference 6.2.14) and ES Appendix 12A: Appropriate Assessment (Document reference 6.4.18) found there to be no significant effects on the MPA network expected during the Proposed Development lifetime.
Policy NE-MPA-2 Marine protected areas	Proposals that enhance a marine protected area's ability to adapt to climate change, enhancing the resilience of the marine protected area network, will be supported. Proposals that may have adverse impacts on an individual marine protected area's ability to adapt to the effects of climate change, and so reduce the resilience of the marine protected area network,	The HRA indicates no adverse impacts to any designated sites are likely and thus no impact on the ability of those sites to adapt to climate change.



CONSIDERATION	SUMMARY	ASSESSMENT
	must demonstrate that they will, in order of preference:	
	a) avoid b) minimise c) mitigate - adverse impacts	
Policy NE-MPA-3 Marine protected areas	Where statutory advice states that a marine protected area site condition is deteriorating or that features are moving or changing due to climate change, a suitable boundary change to ensure continued protection of the site and coherence of the overall network should be considered.	The Proposed Development does not influence the management of marine protected areas.
Policy NE-MPA-4 Marine protected areas	Proposals that may have significant adverse impacts on designated geodiversity must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant.	An assessment of the Proposed Development on designated geodiversity has been presented in Chapter 10 of the ES 'Geology, hydrogeology and contaminated land' (Document reference 6.2.10). The Proposed Development will not result in significant adverse impacts on designated geodiversity.
Policy NE-BIO-1 Biodiversity	Proposals that enhance the distribution of priority habitats and priority species will be supported. Proposals that may have significant adverse impacts on the	The Proposed Development is located within close proximity to several priority marine habitats, including Annex I priority habitat 'Mudflats and Sandflats not covered by seawater at low tide', and priority marine species including herring (Clupea harengus). Detailed impact assessments conducted in ES Chapter 14:



CONSIDERATION	SUMMARY	ASSESSMENT
	distribution of priority habitats and priority species must demonstrate that they will, in order of preference:	Marine Ecology (Document reference 6.2.14) have identified No Significant Adverse impacts on priority habitats and species.
	a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant d) compensate for significant adverse impacts that cannot be mitigated.	
Policy NE-BIO-2 Biodiversity	Proposals that enhance or facilitate native species or habitat adaptation or connectivity, or native species migration, will be supported. Proposals that may cause significant adverse impacts on native species or habitat adaptation or connectivity, or native species migration, must demonstrate that they will, in order of preference:	The Proposed Development intersects a limited number of minor tributaries that drain into the River Tees. The River Tees is an important migratory route for several fish species including salmon (Salmo salar) and brown trout (Salmo trutta). However, due to the nature of the Proposed Development and only short-term temporary works occurring within a number of minor tributaries that are not anticipated to represent migratory routes, no significant adverse effects are expected.
	a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant	



CONSIDERATION	SUMMARY	ASSESSMENT
	d) compensate for significant adverse impacts that cannot be mitigated.	
Policy NE-BIO-3 Biodiversity	Proposals that conserve, restore or enhance coastal habitats, where important in their own right and/or for ecosystem functioning and provision of ecosystem services, will be supported. Proposals must take account of the space required for coastal habitats, where important in their own right and/or for ecosystem functioning and provision of ecosystem services, and demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate	There is expected to be no habitat loss in intertidal habitats down to mean low water during the construction, operation or decommissioning of the Proposed Development. Construction of the hydrogen pipeline across the River Tees and Greatham Creek will use trenchless technologies.
	d) compensate for - net habitat loss.	
Policy NE-INNS-1 Invasive non- native species	Proposals that reduce the risk of introduction and/or spread of invasive non-native species should be supported.	Due to the use of vessels as part of the Proposed Development, there is the potential for the introduction, transportation and spread of invasive non- native species, either from biofouling or from the discharge of ballast water and bilge water.
	Proposals must put in place appropriate measures to avoid or minimise significant adverse impacts	All Proposed Development vessels shall adhere to the International Convention for the Control and Management of Ships' Ballast Water and Sediments with the aim of preventing the spread of marine INNS. All Proposed



CONSIDERATION	SUMMARY	ASSESSMENT
	<ul> <li>that would arise through the introduction and transport of invasive non-native species, particularly when:</li> <li>1) moving equipment, boats or livestock (for example fish or shellfish) from one water body to another</li> <li>2) introducing structures suitable for settlement of invasive non-native species, or the spread of invasive nonnative species known to exist in the area.</li> </ul>	Development vessels shall also adhere to the International Maritime Organisation (IMO) Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (Biofouling Guidelines) and International Convention for the Control and Management of Ships' Ballast Water and Sediments with the aim of preventing the spread of marine INNS. With these measures, the risk of introduction and spread of invasive non-native species through ballast water and biofouling will be considerably reduced, making the risk of transmission low. Therefore, given the limited use of vessels and the implementation of good practice mitigation measures, the risk of existing or new invasive non-native species becoming established or proliferating to an extent that would cause ecological harm is considered to be very low. Due to this, native species are considered to have low sensitivity to the introduction of invasive non-native species, and the magnitude is assessed as very low. As a result, the overall impact is considered Negligible.
Policy NE-INNS-2 Invasive non- native species	Public authorities with functions to manage activities that could potentially introduce, transport or spread invasive non-native species should implement adequate biosecurity measures to avoid or minimise the risk of introducing, transporting or spreading invasive non-native species.	The Applicant is not a public authority and as such, this policy is not applicable.
Policy NE-DIST-1 Disturbance	Proposals that may have significant adverse impacts on highly mobile species through disturbance or	There is potential for the Proposed Development to disturb fish, marine mammals (particularly seals) and birds. However, several mitigation measures will be in place to reduce the effects of disturbance to such species. Taking



CONSIDERATION	SUMMARY	ASSESSMENT
	displacement must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts so they are no longer significant.	mitigation measures into consideration, ES Chapter 14: Marine Ecology (Document reference 6.2.14) has determined no residual significant effects to fish and marine mammals. Furthermore, ES Chapter 13: Ornithology (Document reference 6.2.13) has reported no significant effects on any of the marine ornithological receptors.
Policy NE-UWN-1 Underwater noise	Proposals that result in the generation of impulsive sound must contribute data to the UK Marine Noise Registry as per any currently agreed requirements. Public authorities must take account of any currently agreed targets under the Marine Strategy Part One Descriptor 11.	Based on assessments in ES Chapter 11: Noise and Vibration, and ES Chapter 14: Marine Ecology (Document references 6.2.11 and 6.2.14), the Proposed Development is not expected to result in the generation of impulsive sound in the marine environment.
Policy NE-UWN-2 Underwater noise	Proposals that result in the generation of impulsive or non-impulsive noise must demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate - adverse impacts on highly mobile species so they are no longer significant.	The Proposed Development is expected to generate non-impulsive noise during construction and operation. However, noise generated is expected to be airborne noise rather than underwater noise. Airborne noise could affect seals haul-out at Seal Sands, which has been assessed in ES Chapter 14: Marine Ecology. The impact pathway for underwater noise was scoped out of the assessment in Chapter 14. The underwater sound produced by the small number of vessels associated with the Proposed Development, are not expected to be greater than the background vessel noise.



CONSIDERATION	SUMMARY	ASSESSMENT
	If it is not possible to mitigate significant adverse impacts, proposals must state the case for proceeding.	
Policy NE-CE-1 Cumulative effects	Proposals which may have adverse cumulative effects with other existing, authorised, or reasonably foreseeable	The cumulative effects of the Proposed Development have already been identified as part of Chapter 23 'Cumulative and Combined Effects' of the ES.
	proposals must demonstrate that they will, in order of preference:	Potential marine ecology effects as a result of the Proposed Development have been assessed within ES Chapter 14 'Marine Ecology'. Several of the potential impact pathways identified are assessed as being not significant through the
	a) avoid b) minimise c) mitigate - adverse cumulative and/or	use of best practice and industry standard proposed design avoidance and best practice measures. As a result, it is not considered that there could be cumulative effects for these, and they have not been considered within this
	in-combination effects so they are no longer significant.	assessment.
		The cumulative viewpoint assessment identified that Viewpoint 7 would be subject to a Moderate Adverse (Significant) cumulative effect as a result of views of the operation of the Proposed Development if concurrent with the construction and operation of a number of the identified cumulative
		developments. During operation, the cumulative effect is the same overall classification. Due to the proximity of this viewpoint and limitation for vegetative screening it is not possible to mitigate these cumulative effects.
		However the adverse effect should be outweighed by the significant public benefits provided by the Proposed Development as stated in the response to Policy NE-SCP-1 above.



CONSIDERATION	SUMMARY	ASSESSMENT
		No combination effects were identified on any receptors within the marine area as a result of the Proposed Development.
Policy NE-CBC-1 Cross-border co- operation	Proposals must consider cross-border impacts throughout the lifetime of the proposed activity.	The Proposed Development sits entirely in the Inshore North East Marine Plan.

# 1.1.5 Table 6.4 NPPF policies is set out below:

# Table 6.4 – NPPF Policies

NPPF REF.	POLICY SUMMARY	ASSESSMENT
Chapter 6 Building a strong, competitive economy	Confirms that the Government is committed to securing economic growth and productivity and allowing each area to build on its strengths, counter any weaknesses and address	The Proposed Development will contribute toward sustainable economic development through the provision of new low carbon electricity, for which there is a confirmed need. This will contribute toward the security of electricity supplies, while helping
	the challenges of the future. Paragraph 86 makes it clear that the planning system should do all it can to support sustainable economic growth though, amongst other measures, planning proactively and removing barriers to investment such as a lack of infrastructure.	safeguard jobs in existing carbon intensive industries by enabling them to connect to the hydrogen distribution network and thus decarbonising their operations. The Proposed Development will also create significant employment opportunities during the construction stage and permanent employment opportunities during the operational stages.



NPPF REF.	POLICY SUMMARY	ASSESSMENT
Chapter 9 Promoting ustainable ransport	Aimed at facilitating more sustainable transport choices so as to contribute to wider sustainability and public health objectives. Paragraph 109 stets that the planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. Paragraph 117 states that all developments that generate significant amounts of movement should be supported by a transport statement or assessment and these should consider the opportunities to make use of sustainable transport modes.	The main potential impact of the Proposed Development on transport will be during the construction stage. The assessment of traffic and transport in the ES is based on a worst-case scenario (all transport by road, including construction materials) but demonstrates traffic and transport effects during construction will be acceptable and will not adversely impact on the highway network. The transport effects during operation would be limited. The Applicants have submitted a Framework Construction Traffic Management Plan and a Framework Construction Workers Travel Plan with the Application. These framework plans include measures to manage and minimise transport impacts during construction. The final CTMP will be secured by Requirements 18 within the draft DCO and implemented by the appointed contractor(s).
Chapter 11 Making effective use of and	Aimed at promoting the effective use of land, including by (paragraph 124c) giving substantial weight to the use of suitable brownfield land.	Much of the Proposed Development is located on former or existing industrial and previously developed land. The Main Site comprises part of the former Redcar Steel Works Site (the Foundry). The hydrogen distribution corridors have been routed where practicable to utilise brownfield land and existing



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		pipeline/cable routes and so minimise environmental impacts. The Proposed Development, notably the location and extent of the main Site (and its use) is consistent with the planned redevelopment of the South Tees Area/Teesworks as set out in the South Tees SPD. The Proposed Development therefore makes effective use of land.
Chapter 12 Achieving well- designed and beautiful places	Deals with the matter of design in the built environment. Paragraph 137 states that design quality should be considered throughout the evolution	The design of the Proposed Development is appropriate in its context and setting, which is very much industrial, and it incorporates the principles of 'good design' at set out in the Design and Access Statement.
	and assessment of individual proposals. Early discussion between applicants, the local planning authority and local community about the design and style of emerging schemes is important for clarifying expectations and reconciling local and commercial interests. Applicants should work closely with those affected by their proposals to evolve designs that take	The buildings and structures will be set well within the Main Site boundaries in accordance with the Teesworks Design Guide. The appearance of the buildings and structures, although largely determined by its function, will be consistent with the 'Large-scale Industrial Operations' (including major energy generation) typology identified within the Teesworks Design Guide and the use of materials will reflect the design guide. The appearance of the buildings/structures is also consistent with the fact that the Main Site is not identified as a Gateway Plot or a primary route within the Teesworks area. The Main Site will also incorporate appropriate landscaping and access arrangements.
	account of the views of the community. Applications that can demonstrate early, proactive and effective engagement with the community should be looked on more	The hydrogen distribution network will comprise primarily of pipelines, which will for the for the most part be installed below ground or upon existing pipe- racking and structures within existing infrastructure corridors. The infrastructure required for the distribution network will not therefore be highly visible, nor alter the use or character of the land to which they relate. The
	favourably than those that cannot.	approach that has been taken in selecting the distribution corridors has been



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		to maintain separation from and limit effects upon sensitive receptors such as residential properties and areas of amenity of nature conservation value and minimise as far as possible the crossings of roads, railways and watercourses.
		The detailed design of the Proposed Development will be secured by a number of requirements within the draft DCO.
Chapter 14 Meeting the challenge of climate change, flooding and	Focuses upon adapting to and mitigating the effects of climate change. Paragraph 163 (a) establishes that	The Proposed Development incorporates a number of measures within its design to ensure resilience in terms of the effects of climate change as well as contributing to mitigating those effects. This includes appropriate flood risk mitigation and landscaping and biodiversity enhancement.
coastal change	when determining planning applications for renewable and low carbon development, local planning authorities should not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small- scale projects provide a valuable contribution to significant cutting greenhouse gas emissions.	The Proposed Development will not only produce clean hydrogen but also provide a connection to infrastructure for the capture of CO2 emissions from the production process. This provides infrastructure to assist in decarbonising industry on Teesside. The ES (Chapter 19 'Climate Change') confirms that the Proposed Development will not result in significant climate changes effects and that the Proposed Development could result in a net reduction in CO <sub>2</sub> emissions from current levels, with a beneficial effect on annual UK carbon emissions.
	Paragraph 165 warns that inappropriate development in areas at risk of flooding should be avoided but where it is necessary the development	



NPPF REF.	POLICY SUMMARY	ASSESSMENT
	should be made safe for its lifetime without increasing flood risk elsewhere. If it is not possible for development to be located in zones with a lower risk of flooding the exception test may have to be applied.	
Chapter 15 Conserving and enhancing the natural	Aimed at protecting and enhancing value landscapes, recognising the intrinsic character and beauty of the countryside, and the wider benefits	The ES demonstrates that the Proposed Development will not result in unacceptable impacts on the natural environment for matters such as ecology/nature conservation, landscape, and water quality, amongst others.
environment	from natural capital, minimising impacts on and where possible providing net gains for biodiversity and preventing new and existing development from contributing to, being put at risk from or being	The Proposed Development will be located on brownfield land and the Application proposes proportionate measures in respect of contaminated land. The draft DCO includes a requirement (Requirement 12) to secure a scheme to deal with the contamination of land, including groundwater, upon which the EA must be consulted.
	adversely affected by unacceptable levels of soil, air, water or noise pollution and land instability.	The HRA undertaken confirms that Proposed Development will not adversely affect the integrity of any European sites either alone or in combination with other plans and projects. Furthermore, the assessments in the ES confirm that impacts upon the natural environment, taking account of mitigation, are either not significant or can be reduced to acceptable levels.
		The Applicant notes that the provisions of the Environment Act 2021 relating to BNG for application under the TCPA have now come into force. However, provisions relating to PA 2008 have not yet come into force and are not expected to until at least November 2025. At a national level, this delay



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		reflects the need for the complexities of infrastructure projects and their
		interaction with the BNG metric to be fully understood by Natural England and
		developers, acknowledging that they are not the same as blocks of land lost to
		housing developments.
		This is particularly the case for the Proposed Development, with its
		connections corridors involving a mix of above and underground land
		requirements for different types of pipelines, but which are also surrounded by
		a number of existing assets, necessitating differing limits of deviation. The
		Proposed Development also has a range of 'temporary' land requirements that
		are shown on the Land Plans (Document Ref. 2.2) but which may not in fact
		involve habitat loss. As such, the true 'loss' of habitats to the Proposed
		Development is much less than would actually be the case than simply
		assuming that the loss includes the entirety of the proposed Order Limits.
		Natural England is therefore working with the energy and infrastructure
		industry to consider how best the metric can apply to projects such as the
		Proposed Development.
		A specific additional complexity for the Proposed Development is the Main
		Site. At the moment the Main Site is the subject of extensive demolition works
		for the removal of the former Redcar Steelworks and its associated
		infrastructure; and it is anticipated it will also shortly be subject to extensive
		remediation activities. The former Steelworks are subject to restoration and
		habitat establishment requirements, and it is considered likely that this will
		apply to the remediation works. As such, the ecological baseline position of
		the Main Site now would, for BNG purposes, be unrealistic in terms of



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		establishing what the 'pre-development' habitat condition should be
		considered to be for the Main Site.
		For these reasons, the Applicant has not submitted a BNG report/assessment as part of its application for development consent. Notwithstanding this, and mindful of the policy imperatives of EN-1, the Applicant is committed to ensuring that the ecological impacts of the Proposed Development are fully mitigated, and where possible given the constraints of the proposed Order Limits and the Main Site more generally, deliver enhancements.
		The Applicant's proposals for ecological mitigation and enhancement are set out in Chapter 12 'Terrestrial Ecology and Nature Conservation' (Document Ref. 6.2.12) and in the Outline Landscape and Biodiversity Management Plan ('BLMP') (Document Ref. 5.9). The measures in the latter will be developed into a Full BLMP to reflect the detailed design (and impacts) of the Proposed Development, in substantial accordance with that outline. This is secured by Requirement 4 of the draft DCO (Document Ref. 4.1). Through these measures, the Applicant will be able to deliver a commitment to no net loss, as a minimum.
		Furthermore, the Applicant is keen to secure enhancements in the wider Teesside area off-site from the proposed Order Limits (as allowed for by EN-1, paragraph 4.6.11) and is working with stakeholders such as Natural England, the EA and RPSB to develop proposals in this regard. While 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 though a section 106 development



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		consent obligation, will be able to demonstrate a wider qualitative net gain overall as a result of the Proposed Development.
Chapter 16 Conserving and enhancing the historic	Seeks to conserve heritage assets so that they can be enjoyed for their contribution to the quality of life of existing and future generations.	The potential impact of the Proposed Development upon the historic environment is considered at Chapter 17 'Archaeology and Heritage' of ES Volume I.
environment	Paragraph 195 states that these assets are an irreplaceable resource, and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of	Chapter 17 deals with cultural heritage and archaeology in respect of the onshore elements of the Proposed Development. The potential effects of the Proposed Development are assessed during the construction, operation and decommissioning stages. Section 17.6 of Chapter 17 – 'Impacts and Likely Significant Effects' provides a detailed assessment of individual assets per development stage.
	existing and future generations.	There are no designated heritage assets located within the Main Site. As the Main Site has been developed extensively since the late-19th century it is likely
	Paragraph 200 states that where a development proposal includes, or has potential to include, heritage assets with archaeological interest, local planning authorities should require	to have removed all traces of the breakwater, reclamation wall, jetty and tramway features that appear on 19th century map evidence. Construction of the Proposed Development on the Main Site will therefore not affect their historic interest and will therefore result in no impact and no effect.
	developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.	There are no designated heritage assets located within the Natural Gas Connection Corridor. However, the site of Coatham Iron Works and a former reservoir of the ironworks are located in the eastern section of the Natural Gas Connection Corridor. Based on the desk-based evidence, the remains are assessed to be of local importance and Low value. The construction of the Natural Gas Connection Corridor has the potential to permanently remove a



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		proportion of these remains but will not remove them entirely. This
		constitutes a Medium magnitude of impact, resulting in a Minor Adverse effect
		which is Not Significant.
		The Electrical Connection Corridor is situated to the south and immediate east
		of the Main Site and would result in impacts to the reclamation wall, the site
		of Coatham Ironworks and reservoir and the site of a tramway. As previously
		discussed, the reclamation wall and tramway have been largely removed from
		the archaeological record and would not be subject to any impacts or effects.
		The remains of Coatham Ironworks and former reservoir would be partially
		truncated by construction activities, which would result in a Medium
		magnitude of impact on assets of Low heritage value, resulting in a Minor
		Adverse effect, which is Not Significant.
		The two Water Connections Corridors largely overlap the Natural Gas
		Connection Corridor and the Electrical Connection Corridor. There are no
		designated assets within this work area and impacts from construction will
		mirror those discussed above.
		The Hydrogen Distribution Corridor extends across the Tees Valley with the
		construction type comprising a mixture of above and below ground trenches
		and trenchless technologies, such as HDD and MBT. The construction of below
		ground trenches, and the excavation of launch and receptor pits/shafts for
		HDD and MBT, has the potential to result in permanent impacts to buried
		archaeological remains that may be present. Above ground elements of the
		pipeline have the potential to introduce new visual elements to the setting of
		heritage assets and to the historic landscape. However, the mitigation



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		measures described in Section <b>Error! Reference source not found.</b> of Chapter 17, comprising a programme of archaeological evaluation and excavation in advance of construction, will ensure that the significant effect is offset to minimise residual significant effects that may occur, such that they would not be significant. The details of the evaluation and mitigation will be agreed with LPA archaeologists and the implementation secured through a WSI as part of draft DCO Requirement 13.
		No other significant adverse heritage effects are anticipated as a result of the Proposed Development.
		Cowpen Bewley itself is a conservation area partially bisected by the Hydrogen Distribution Corridor. The Hydrogen Distribution Corridor will be buried in the area around Cowpen Bewley Conservation Area, which will result in the localised truncation of medieval ridge and furrow associated with the village and surrounding hinterland as discussed above. It would also result in the temporary removal of small sections of 'important' hedgerows which mark the boundaries of medieval field systems. These sections of hedgerow would be reinstated following construction. This would result in a Low magnitude impact on this asset of Medium heritage value, resulting in a Minor Adverse effect, which is Not Significant.
		During the Operational stage the most visually prominent components of the operational development will be the Hydrogen Production Facility, located on the Main Site. The Main Site is located on the edge of a heavily industrial area of Teesside; an area that has been occupied by industrial structures since the 19th century and which has also seen multiple changes as industries and



NPPF REF.	POLICY SUMMARY	ASSESSMENT
		technologies adapted and advanced. The presence of structures within the Main Site will represent a new building amongst the cluster of existing industrial buildings in this part of the Tees Valley. Its presence will represent a change in views of this area, but the change will not be incongruous with the area's existing character.
		It is proposed that the scope of mitigation is discussed with and approved by the Archaeological advisors to RCBC. The methodologies will be set out in a Written Scheme of Investigation (WSI), which will be submitted to RCBC for approval. The WSI will be secured by Requirement 13 'Archaeology' of the draft DCO.
		No impacts or effects are anticipated to cultural heritage during decommissioning. Nevertheless, should the work involve intrusive activities beyond the footprint of ground disturbance caused by the Proposed Development, any essential mitigation would be agreed in a Decommissioning Plan which would include a Decommissioning Environmental Management Plan (DEMP) secured by Requirement 28 on the draft DCO.

1.1.6 Table 6.5 local development plan policies is set out below:

POLICY NO.	POLICY DOCUMENT	POLICY TITLE	SUMMARY OF POLICY	ASSESSMENT
SD1			<b>o</b> 1	The Proposed Development supports the principles of sustainable development. It will bring brownfield land



POLICY NO.	POLICY DOCUMENT	POLICY TITLE	SUMMARY OF POLICY	ASSESSMENT
			positive approach reflecting the presumption in favour of sustainable development within the NPPF. Developments should improve the economic, social and environmental conditions of the area.	back into beneficial use, contributing toward the regeneration of the South Tees Area/Teesworks. It will contribute to the decarbonisation of Teesside in line with the Government's legally binding target of Net Zero by 2050 and create significant employment opportunities. The ES has demonstrated that the Proposed Development will not result in unacceptable impacts on the environment through the implementation of appropriate mitigation and control measures.
SD2	RCBC Local Plan	Locational Policy	Development will be directed to the most sustainable locations in the Borough. The majority of development will be focused in the urban and coastal areas. Priority will be given to brownfield land in sustainable locations that is not of high environmental value.	The Proposed Development supports the Locational Policy in that it involves the redevelopment of brownfield industrial land within the South Tees Area/Teesworks. The routing of the connection corridors has sought to avoid and minimise impacts on sensitive receptors and areas of high environmental value and for the most part they follow existing pipeline/cable routes and involve existing or former industrial land.
SD3	RCBC Local Plan	Development Limits	Within development limits, development will be supported, subject to meeting other policies in the Local Plan. Development beyond development limits will be to specific circumstances such as where the development requires a countryside	The Proposed Development involves the redevelopment of brownfield land. Much of the Site lies within areas of the Borough that are identified as suitable for energy and industrial use. Any development outside the Development Limits of the Borough is required for operational and technical reasons (to provide connections for the Proposed Development) and the



POLICY NO.	POLICY DOCUMENT	POLICY TITLE	SUMMARY OF POLICY	ASSESSMENT
			location due to technical or operational reasons or it involves the redevelopment of brownfield land that is not of high environmental value.	Applicants have sought to minimise impacts and appropriate mitigation and control measures are included.
SD4	RCBC Local Plan	General Development Principles	In assessing the suitability of a site or location, development will be permitted where it meets the requirements of the Locational Policy and will not have a significant adverse effect on amenity; result in unacceptable loss or significant adverse effect on the environment; avoids locations that put the environment or human health or safety at unacceptable; or results in adverse effects on nature conservation sites, amongst other matters. All development must be designed to a high standard.	As confirmed above, the Proposed Development is consistent with the Locational Policy. Furthermore, a comprehensive EIA of the Proposed Development has been undertaken, which demonstrates that it will not result in unacceptable impacts on nature conservation (the HRA confirms no adverse effects on the integrity of European sites), human health or safety. Furthermore, the design of the Proposed Development is appropriate in terms of its context and setting and it incorporates the principles of 'good design'.
SD6	RCBC Local Plan	Renewable and Low Carbon Energy	Renewable and low carbon energy schemes will be supported and encouraged, and will be approved where their impact is, or can be made, acceptable. In determining applications for renewable and low	The Proposed Development is entirely consistent with the policy to support renewable and low carbon energy within the area. It will provide a carbon capture enabled hydrogen production facility, a Hydrogen distribution network, comprising underground and overground pipelines to supply hydrogen to the above ground



POLICY NO.	POLICY DOCUMENT	POLICY TITLE	SUMMARY OF POLICY	ASSESSMENT
			carbon energy and associated infrastructure matters that will be taken into account include the scale of the development, impact on residential amenity, environmental impacts, the sensitivity of the landscape, airport and military considerations and the cumulative impact of proposals, amongst other matters.	storage and offtakers across Teesside and a high-pressure carbon dioxide export pipeline for the export of the captured CO <sub>2</sub> to the NEP infrastructure. The EIA confirms that the Proposed Development will not result in unacceptable impacts and any cumulative effects will be limited and outweighed by its substantial benefits.
SD7	Plan Water flooding will only be Management meets the sequenti tests, will be safe ar increase flood risk e Development will b designed to mitigat climate change. A f	Development in areas at risk of flooding will only be granted where it meets the sequential and exception tests, will be safe and does not increase flood risk elsewhere. Development will be expected to be designed to mitigate and adapt to climate change. A flood risk assessment will be required.	A Preliminary Flood Risk Assessment (FRA) is appended to the ES (Appendix 9A: Flood Risk Assessment (Volume III, EN070009/APP/6.4)). The Main Site is located within a Flood Zone 1 and some sections of the pipelines making up the Hydrogen Distribution Network are within Flood Zones 2 and 3. The FRA will be used to inform the detailed design of the Proposed Development in terms of surface water management and the selection of finished floor levels.	
				Mitigation measures are described in the FRA and include identifying a suitable level of the development platform for the Main Site taking into account potential climate change impacts, building the Proposed Development using Flood Resistant and Resilient Design

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POLICY NO.	POLICY DOCUMENT	POLICY TITLE	SUMMARY OF POLICY	ASSESSMENT
				standards, a system for monitoring flood warnings, and the development of a Flood Emergency Response Plan.
				Although in Flood Zone 1, the Main Site is on a raised platform to ensure that critical electrical equipment, such as transformers and switchgear, are to be located above any potentially predicted flood levels as a result of climate change effects.
				However, works located within Flood Zone 3 comprise either underground pipework or installation of pipelines on existing pipe racking. The need to develop the pipelines in this location is essential to connect to existing industrial sources seeking to decarbonise their operations.
				The Proposed Development will have very clear wider sustainability benefits to the community. It will contribute to the security of electricity supplies and provide 'Essential Infrastructure' which will enable local industries to decarbonise while providing significant employment and economic benefits.
				Furthermore, the FRA demonstrates that the Proposed Development will be safe from the risk of flooding and



POLICY NO.	POLICY DOCUMENT	POLICY TITLE	SUMMARY OF POLICY	ASSESSMENT
				will not increase the risk of flooding off-site. It is therefore considered that the Exception Test is satisfied.
ED6	RCBC Local Plan	Promoting Economic Growth	Policy ED6 confirms that land and buildings within existing employment areas shown on the Policies Map will continue to be developed and safeguarded for employment uses. It goes onto state that specialist uses, including energy and heavy processing industries and port logistics will be focused in the South Tees Area, Wilton International and Skinningrove. In these areas proposals falling within Use Classes B1, B2, B8 and suitable employment related sui generis uses will be supported. Proposals in the South Tees Area should have regard to the South Tees Area SPD. Proposals will need to demonstrate that there will be no adverse effects on the integrity of the nearby protected nature conservation sites. Proposals will be encouraged to improve the quality of the environment.	The Proposed Development is consistent with the land uses that are identified as appropriate for the area (including the South Tees Area) covered by Policy ED6. As will be demonstrated below the Applicant have had regard to the South Tees Area SPD and there will be no adverse effects on the nearby protected nature conservation sites.



POLICY NO.	POLICY DOCUMENT	POLICY TITLE	SUMMARY OF POLICY	ASSESSMENT
LS4	RCBC Local Plan	South Tees Spatial Strategy	The Spatial Strategy includes the South Tees Development Corporation area, Wilton International, Teesport and the South Tees Industrial Estates and Business Parks. The Policy aims to support the delivery of significant economic growth and job opportunities in this area, including encouraging clean and efficient industry to help reduce carbon emissions and the development of Carbon Capture and Storage ('CCS') to decarbonise the local economy. The Policy also seeks to improve the environmental quality of the area and to protect the nearby nature conservation sites.	The Proposed Development will support and enable the delivery of the Spatial Strategy for the South Tees Area. It will regenerate brownfield land, deliver infrastructure helping to decarbonise the local economy and create jobs. It will also contribute to the environmental quality of the area by bringing derelict land back into beneficial use and through the incorporation of landscape and biodiversity measures. The ES (and HRA) confirm that it will not result in adverse effects on the nearby protected nature conservation site or other nature conservation interests.
N1	RCBC Local Plan	Landscape	Policy N1 seeks to protect and enhance the Borough's landscapes. Development proposals will be considered within the context of the Landscape Character Assessment, the Landscape Character SPD and the Historic Landscape Characterisation. Proposals will not be permitted where	Chapter 16 of the ES – 'Landscape and visual amenity' identifies the potential impacts and effects on landscape character and visual amenity as associated with the Proposed Development. For the purpose of the assessment the extent of the Study Area is determined by the potential visibility of the Proposed Development in the surrounding landscape. It is highly unlikely that significant effects would be experienced further than 10



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			they would lead to the loss of features important to the character of the landscape, its quality and distinctiveness, unless its benefits clearly outweigh landscape considerations.	km from the Main Site further than 2 km from the various Connection Corridors. The Main Site is not subject to any national landscape designations, neither are there any within the immediate vicinity. Furthermore, the Proposed Development will not result in the loss of features that are important to the local landscape. The Main Site will require the clearance and redevelopment of the former Redcar Steel Works Site (the Foundry), while the routing of the connection corridors has sought to avoid and minimise impacts on sensitive receptors and areas of high environmental value and for the most part the follow existing pipeline/cable routes and involve existing or former
				industrial land. Table 16.4: Landscape Sensitivity Assessment in ES Volume I Chapter 16 'Landscape and Visual Amenity' provides a summary assessment of the sensitivity of each landscape receptor including Local Landscape Character areas and Table 16.5 provides an assessment of the anticipated magnitude of landscape impacts and the classification of effects on each landscape receptor during the Proposed Development construction phase. The assessment has determined that the Proposed Development is unlikely to result in significant adverse



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				landscape effects during any of the assessment
				scenarios.
				The 'visual amenity assessment', does identify that the
				Proposed Development will result in a small number of
				recreational receptors associated with the England
				Coastal Path (Viewpoint 7) and Redcar Seafront
				(Viewpoint 8) experiencing significant short-term adverse
				visual effects during the construction stage, as a result of
				the proximity to the Main Site and the limited
				intervening vegetation. These effects will also be
				significant during the operational stage along the England
				Coastal Path (Viewpoint 7) due to the proximity and
				prominence of structures associated with the Proposed
				Development. However, this is an industrial location,
				which already exhibits large scale industrial
				development, and for which more development is
				planned, notably at Teesworks, including the NEP
				infrastructure. Furthermore, it is considered that the
				significant benefits of the Proposed Development
				outweigh its limited landscape and visual effects.
				In designing the Proposed Development, the Applicants
				have sought to minimise its landscape and visual effects.
				This has included seeking to consolidate the built form at
				the Main Site where possible, with the main buildings



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				and structures set well back from the site boundaries. Appropriate materials and colours will also be selected and used for the external finishes of the buildings/structures in order to minimise landscape and visual effects and the details of these will be secured through Requirement 3 'Detailed design' of the draft DCO. Furthermore, Requirement 4 "Landscape and biodiversity management plan " of the draft DCO will secure the details of landscaping associated with the Proposed Development.
N2 & N3	RCBC Local Plan	Green Infrastructure and Open Space and Recreation	The Council will aim to protect and enhance the green infrastructure network. Opportunities to incorporate green infrastructure into development proposals should be sought. Green infrastructure includes strategic green infrastructure corridors, strategic gaps, green wedges, open spaces, strategic landscape areas, heritage assets, public rights of way and beck valleys and watercourses. Where there is a loss of green infrastructure the principle of 'net gain' should apply.	The Proposed Development comprises largely existing or former industrial land. The Main Site is located on part of the former Redcar Steelworks (the Foundry). Section 6.5 of Chapter 6 'Design Evolution and Alternatives' of ES Volume I sets out the selection approach that has been taken for the location of the Main Site. The hydrogen distribution corridors largely follow existing pipeline corridors that cross existing or former industrial land. The routing of the distribution corridors has sought to avoid sensitive receptors and minimise impacts on these. Section 6.7 of Chapter 6 'Design Evolution and Alternatives' of ES Volume I sets out the approach that



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			Seeks to protect open space and recreation facilities from development.	has been taken to the routing of the connection corridors.
				To mitigate the land loss associated with Cowpen Bewley Woodland Park, for sections of the pipeline, trenchless methods of construction will be used to avoid the removal of any existing trees. Therefore, there will be a line of trees between the railway and the AGI which are left intact throughout construction, providing some visual screening of the activities north of the railway.
				There is a section of pipeline at normal depth of cover which runs into the AGI, approximately 40m in length. This section of pipeline will be installed by open cut methods, which will require a cleared route which will be approximately 30m wide. To do this, vegetation and trees will be removed. Topsoil will be stripped; however, this will be stored locally, then replaced after the pipeline is lowered and backfilled. Using the expected length and width, the total area of cleared vegetation for the open cut pipeline easement is 480m <sup>2</sup> , which will be a permanent change to the area. The AGI itself will cover an area of 607m <sup>2</sup> .
				There are multiple existing pipeline easements around the existing AGI which are cleared of large vegetation,



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				which form natural walking routes. After the completion of the construction period, the hydrogen pipeline easement will form a similar natural walking route through Cowpen Bewley Woodland Park. Public access to the woodland immediately surrounding the existing AGI is expected to be limited during construction due to the nature of the work (i.e. construction safety).
				The Applicant intends to mitigate the permanent loss of open space at Cowpen Bewley Woodland Park with a replacement area of land that would be of at least the same size and standard as the land required by the project. This will downgrade the magnitude of impact of the Proposed Development on PRoW and Open Space in the construction phase to Low. Overall, the residual effect of the Proposed Development on PRoW and Open Space is assessed to be Minor Adverse (Not Significant) as a result. The Applicant will work with Stockton-on-Tees Borough Council to agree the layout and planting of this land.
N4	RCBC Local Plan	Biodiversity and Geological Conservation	Seeks to protect and enhance the Borough's biodiversity and geological resources. Development should avoid detrimental impacts on biodiversity	The potential effects of the Proposed Development on biodiversity and ecology are assessed in detail within Chapters 12 'Ecology and Nature Conservation', 14 'Marine Ecology', and 13 'Ornithology' of ES Volume I.



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		POLICY TITLE	and geodiversity whether individual or cumulative. Where this is not possible mitigation, or compensation must be provided. Development proposals will be considered in accordance with the status of biodiversity and geodiversity sites within the hierarchy. Priority will be given to the protection of internationally important sites such as the Teesmouth and Cleveland Coast SPA/Ramsar and the North York Moors SPA and SAC. Development that is not directly related to the management of such sites and which is likely to have a	ASSESSMENT The surveys that have informed the assessments are contained within ES Volume III. The conclusions of the assessments covered in these chapters are as follows: Terrestrial ecology – The majority of residual effects are categorised as Not Significant (Negligible), indicating that the proposed mitigation measures are expected to address and minimise adverse impacts. Tables 12-9, 12- 10 and 12-11 in Chapter 12 provides a summary of residual effects during construction, operation and decommissioning of the Proposed Development: • Aquatic ecology – no likely significant effects on species or habitats taking account of mitigation.
			significant effect upon them will be subject to an Appropriate Assessment. Development that will have an adverse impact on nationally important sites such as SSSI will not be allowed unless the benefits of the development outweigh the impacts; no reasonable alternatives are available; and mitigation, or where necessary compensation, is provided for the impact. The Policy also seek to safeguard locally important nature	<ul> <li>Marine ecology – no significant adverse effects taking account of mitigation.</li> <li>Ornithology – no significant effects predicted to occur.</li> <li>The Applicants have undertaken a HRA which concludes that for the construction, operational and decommissioning stages there will be no adverse effects on the integrity of any European site either alone or in combination with other plans and projects.</li> </ul>



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			development should provide 'net gains' in the value of biodiversity.	The Applicant notes that the provisions of the Environment Act 2021 relating to BNG for application under the TCPA have now come into force. However, provisions relating to PA 2008 have not yet come into force and are not expected to until at least November 2025. At a national level, this delay reflects the need for the complexities of infrastructure projects and their interaction with the BNG metric to be fully understood by Natural England and developers, acknowledging that they are not the same as blocks of land lost to housing developments.
			This is particularly the case for the Proposed Development, with its connections corridors involving a mix of above and underground land requirements for different types of pipelines, but which are also surrounded by a number of existing assets, necessitating differing limits of deviation. The Proposed Development also has a range of 'temporary' land requirements that are shown on the Land Plans but which may not in fact involve habitat loss. As such, the true 'loss' of habitats to the Proposed Development is much less than would actually be the case than simply assuming that the loss includes the entirety of the proposed Order Limits. Natural England is therefore working with the energy and	



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				infrastructure industry to consider how best the metric
				can apply to projects such as the Proposed Development.
				A specific additional complexity for the Proposed
				Development is the Main Site. At the moment the Main
				Site is the subject of extensive demolition works for the
				removal of the former Redcar Steelworks and its
				associated infrastructure; and it is anticipated it will also
				shortly be subject to extensive remediation activities.
				The former Steelworks are subject to restoration and
				habitat establishment requirements, and it is considered
				likely that this will apply to the remediation works. As
				such, the ecological baseline position of the Main Site
				now would, for BNG purposes, be unrealistic in terms of
				establishing what the 'pre-development' habitat
				condition should be considered to be for the Main Site.
				For these reasons, the Applicant has not submitted a
				BNG report/assessment as part of its application for
				development consent. Notwithstanding this, and mindful
				of the policy imperatives of EN-1, the Applicant is
				committed to ensuring that the ecological impacts of the
				Proposed Development are fully mitigated, and where
				possible given the constraints of the proposed Order
				Limits and the Main Site more generally, deliver
				enhancements.



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				The Applicant's proposals for ecological mitigation and enhancement are set out in Chapter 12 'Terrestrial
				Ecology and Nature Conservation' (Document Ref. 6.2.12)
				and in the Outline Landscape and Biodiversity
				Management Plan ('BLMP') (Document Ref. 5.9). The
				measures in the latter will be developed into a Full BLMP
				to reflect the detailed design (and impacts) of the
				Proposed Development, in substantial accordance with
				that outline. This is secured by Requirement 4 of the
				draft DCO (Document Ref. 4.1). Through these measures,
				the Applicant will be able to deliver a commitment to no
				net loss, as a minimum. The use of trenchless
				technologies where possible will further minimise effects
				on habitats and species. Permanent habitat losses
				associated with pipelines will be minimised through post-
				construction reinstatement of pipeline routes as close to
				its original state as possible. While this does not remove
				the construction impact, it does provide (except for
				irreplaceable habitats) certainty of reinstatement of
				habitats back to an appropriate end condition, as a well
				as a beneficial reduction in the duration and magnitude
				of the construction effect on habitats and species. The
				Framework CEMP will set out mitigation proposals
				required for relevant locations/habitats which are
				included in the ES.



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				Potential effects on ecology during construction will be
				managed through the implementation of the measures
				that will be set out in the Landscape and Biodiversity
				Management Plan and the final CEMP that will be
				secured by Requirements 4 and 15 of the draft DCO. An
				Ecological Clerk of Works would be present during
				construction as appropriate to supervise and instruct the
				implementation of the mitigation measures in the CEMP.
				Furthermore, options to achieve benefits for biodiversity
				as a direct consequence of the Proposed Development
				are set out within the Outline Landscape and Biodiversity
				Strategy. The detailed proposals for biodiversity
				enhancement relating to the Proposed Development will
				be set out in the Landscape and Biodiversity
				Management Plan (also secured by Requirement 4).
				Chapter 10 'Geology, Hydrology and Contaminated Land'
				confirms that there are no geological interest features
				within the Site boundary or in its vicinity (e.g. Geological
				SSSIs). Furthermore, there are no recorded Regionally
				Important Geological Sites or Locally Important
				Geological Sites within the Site boundary. The effects on
				geology taking account of mitigation will be limited and
				not significant.



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HE2	RCBC Local Plan	Heritage Assets	Seeks to protect designated heritage assets and their settings as well as non-designated heritage assets of archaeological interest.	The potential impact of the Proposed Development upon the historic environment is considered at Chapter 17 'Archaeology and Heritage' of ES Volume I.
				Chapter 17 deals with cultural heritage and archaeology in respect of the onshore elements of the Proposed Development. This includes archaeology, built heritage and historic landscapes and assesses the potential effects of the Proposed Development during construction, operation and decommissioning. Section 17.6 of Chapter 17 – 'Impacts and Likely Significant Effects' provides a detailed assessment of individual assets per development stage.
			In summary, there are no designated heritage assets located within the Main Site, Natural Gas Connection Corridor, Electrical Connection Corridor or the two Water Connections Corridors which will result in significant effects.	
				The Hydrogen Distribution Corridor extends across the Tees Valley with the construction type comprising a mixture of above and below ground trenches and trenchless technologies, such as HDD and MBT. The construction of below ground trenches, and the excavation of launch and receptor pits/shafts for HDD



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				and MBT, has the potential to result in permanent
				impacts to buried archaeological remains that may be
				present. Above ground elements of the pipeline have the
				potential to introduce new visual elements to the setting
				of heritage assets and to the historic landscape. However,
				the mitigation measures described in Section 17.7 of
				Chapter 17, comprising a programme of archaeological
				evaluation and excavation in advance of construction,
				will ensure that the significant effect is offset to minimise
				residual significant effects that may occur, such that they
				would not be significant. The details of the evaluation
				and mitigation will be agreed with LPA archaeologists and
				the implementation secured through a WSI and CEMP as
				part of a DCO Requirements 13 and 15.
				Cowpen Bewley itself is a conservation area partially
				bisected by the Hydrogen Distribution Corridor. The
				conservation area, although small and arranged in a
				linear layout, has an open, quiet and rural character due
				to the large central green which the houses face onto
				and through which Cowpen Lane passes. The Hydrogen
				Distribution Corridor will be buried in the area around
				Cowpen Bewley Conservation Area, which will result in
				the localised truncation of medieval ridge and furrow
				associated with the village and surrounding hinterland as
				discussed above. It would also result in the temporary



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				removal of small sections of 'important' hedgerows which mark the boundaries of medieval field systems. These sections of hedgerow would be reinstated following construction. The truncation of the ridge and furrow, field boundaries and 'important' hedgerows would result in a slight loss in the ability to understand and appreciate the historical significance of the conservation area through changes to its setting. This would result in a Low magnitude impact on this asset of Medium heritage value, resulting in a Minor Adverse effect, which is Not Significant. It is proposed that the scope of mitigation is discussed with and approved by the Archaeological advisors to RCBC. The methodologies will be set out in a Written Scheme of Investigation (WSI), which will be submitted to RCBC for approval. The WSI will be secured by Requirement 13 'Archaeology' of the draft DCO.
TA1	RCBC Local Plan	Transport and New Development	The Council and its partners will ensure that the transport requirement of new development, commensurate to the scale and type of development, are taken into account and seek to promote sustainable travel to minimise environmental impacts and support	The assessment of traffic and transport in the ES is based on a worst-case scenario (all transport by road, including construction materials). It demonstrates traffic and transport effects during construction will be acceptable and will not adversely impact on the highway network. A Framework CTMP and CWTPs forms part of the Application and include measures to manage and



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			residents' health and wellbeing. The Council will support the preparation and implementation of travels plan to encourage the use of sustainable modes.	minimise transport impacts during construction. The final CTMP will be secured by Requirement 18 within the draft DCO and implemented by the appointed contractor(s).
				In order to provide further mitigation, the Applicant is also investigating, and are in discussion with relevant parties, over the use of port and rail facilities for the delivery of construction materials and large items during the construction stage.
STDC1	South Tees Area SPD	Regeneration Priorities	The Council in partnership with STDC will seek to achieve the comprehensive development of the South Tees Area in order to realise an exemplar world class industrial business park. This will include prioritising uses connected with advanced manufacturing and new technologies; promoting and supporting uses and infrastructure connected to a low carbon economy; focusing on high-skilled employment opportunities; protecting heritage assets; improving connectivity and	The Proposed Development is consistent with and supports the policy objectives to achieve the comprehensive redevelopment of the South Tees Area/Teesworks. The Main Site is located on land (within the Northern Industrial Zone 'NIZ') that is identified for energy uses and industry. In formulating the proposal, the Applicant have had regard to the South Tees SPD and emerging Teesworks proposals in order to minimise impact and ensure that the comprehensive development of the area is delivered.



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			environmental quality. Piecemeal development will be resisted.	
STDC4	South Tees Area SPD	Economic Development Strategy	The Council in partnership with STDC will support economic development of the South Tees Area for specialist industries and other industries which would benefit from a location in this area in accordance with Local Plan Policies ED6 and LS4.	As set out above, the Proposed Development is consistent with the land uses that are covered by Policy ED6. It is also in line with Policy LS4 as it will regenerate brownfield land, deliver clean energy infrastructure helping to decarbonise the local economy and create jobs whilst contributing toward improving the environmental quality of the area.
STDC6	South Tees Area SPD	Energy Innovation	The Council in partnership with STDC will promote and support the development of new energy generation in the South Tees Area, including renewable energy development and the promotion of other innovative energy projects. All energy generation should be appropriately sited and designed in order to avoid unacceptable adverse environmental or amenity impacts.	The development of a project that produces clean hydrogen, combined with provision for connecting to a carbon storage facility, is fully in accordance with STDC6. Furthermore, the Main Site involves land (within the NIZ) that is identified in the South Tees SPD (and the Teesworks Design Guide) for energy use. The EIA for the Proposed Development demonstrates that it will not result in unacceptable effects on amenity or the environment.
STDC7	South Tees Area SPD	Natural Environmental	Seeks to protect and, where appropriate, enhance designated and non-designated sites of biodiversity	Please also see the response to Policy N2 and N4 in the RCBC Local Plan which is applicable in response to this policy.



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		Protection and Enhancement	and geodiversity interest and value. All development proposals will be required to comply with Local Plan Policy N4 which seeks to protect the internationally and national designated nature conservation sites within the area. The provision of	The Proposed Development comprises largely existing or former industrial land. The Main Site is located on part of the former Redcar Steelworks (the Foundry). Section 6.5 of Chapter 6 'Design Evolution and Alternatives' of ES Volume I sets out the selection approach that has been taken for the location of the Main Site.
			green infrastructure will be supported in accordance with Local Plan Policy N2. Proposals will be required to have regard to forthcoming biodiversity and open space strategies.	The hydrogen distribution corridors largely follow existing pipeline corridors that cross existing or former industrial land. The routing of the distribution corridors has sought to avoid sensitive receptors and minimise impacts on these. Section 6.7 of Chapter 6 'Design Evolution and Alternatives' of ES Volume I sets out the approach that has been taken to the routing of the connection corridors.
				To mitigate the land loss associated with Cowpen Bewley Woodland Park, for sections of the pipeline, trenchless methods of construction will be used to avoid the removal of any existing trees. Therefore, there will be a line of trees between the railway and the AGI which are left intact throughout construction, providing some visual screening of the activities north of the railway.
				There is a section of pipeline at normal depth of cover which runs into the AGI, approximately 40m in length.

# H2 Teesside Ltd Planning Statement – Policy Assessment Tables

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				This section of pipeline will be installed by open cut methods, which will require a cleared route which will be approximately 30m wide. To do this, vegetation and trees will be removed. Topsoil will be stripped; however, this will be stored locally, then replaced after the pipeline is lowered and backfilled. Using the expected length and width, the total area of cleared vegetation for the open cut pipeline easement is 480m <sup>2</sup> , which will be a permanent change to the area. The AGI itself will cover an area of 607m <sup>2</sup> .
				There are multiple existing pipeline easements around the existing AGI which are cleared of large vegetation, which form natural walking routes. After the completion of the construction period, the hydrogen pipeline easement will form a similar natural walking route through Cowpen Bewley Woodland Park. Public access to the woodland immediately surrounding the existing AGI is expected to be limited during construction due to the nature of the work (i.e. construction safety).
				The Applicant intends to mitigate the permanent loss of open space at Cowpen Bewley Woodland Park with a replacement area of land that would be of at least the same size and standard as the land required by the



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				<ul> <li>project. This will downgrade the magnitude of impact of the Proposed Development on PRoW and Open Space in the construction phase to Low. Overall, the residual effect of the Proposed Development on PRoW and Open Space is assessed to be Minor Adverse (Not Significant) as a result. The Applicant will work with Stockton-on-Tees Borough Council to agree the layout and planting of this land.</li> <li>Under the drafting provided in the DCO, the Applicant is obliged to obtain the local planning authority's approval to a scheme for the layout of the Replacement Land, and then to implement that scheme within a specified period for the second sec</li></ul>
STDC8	South Tees Area SPD	Preserving Heritage Assets	The Council in partnership with STDC will seek to identify those industrial assets which it is appropriate and	of time. The potential impact of the Proposed Development upon the historic environment is considered at Chapter 17 'Archaeology and Heritage' of ES Volume I.
			viable to retain as part of the development of an industrial heritage trail. Development proposals that will affect a designated or non-designated heritage asset or its setting should be in accordance with Local Plan Policy HE2.	There are no designated heritage assets located within the Main Site and neither are there any surviving remains of any previous features within the Main Site. Construction of the Proposed Development on the Main Site will therefore not affect any historic interest and will therefore result in no impact and no effect.



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				For the Natural Gas, Electrical and Water Connection Corridors the assessment undertaken has concluded that any potential effects will be Minor Adverse which is Not Significant.
				The Hydrogen Distribution Corridor extends across the Tees Valley with the construction type comprising a mixture of above and below ground trenches and trenchless technologies, such as HDD and MBT.
				It is proposed that the scope of any mitigation relating to heritage assets is discussed with and approved by the Archaeological advisors to RCBC. The methodologies will be set out in a Written Scheme of Investigation (WSI), which will be submitted to RCBC for approval. The WSI will be secured by Requirement 13 'Archaeology' of the draft DCO.
STDC10	South Tees Area SPD	Utilities	The development of new infrastructure relating to energy generation will be supported, including power generation facilities utilising both conventional and renewable resources and Carbon Capture and Storage ('CCS').	The Proposed Development is consistent with STDC10 as it involves the production of clean hydrogen power and enables access to CCS infrastructure.



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STDC11	South Tees Area SPD	North Industrial Zone	Will encourage development proposals relating to port related industry, major space users/large scale manufacturing, energy innovation, power generation and storage, bulk materials and mineral processing. The potential for an open space recreation and heritage area within the North Industrial Zone ('NIZ') and incorporating the Redcar Blast Furnace is being explored. Development proposals should be in accordance with Local Plan Policy N4 and the requirements of the forthcoming biodiversity strategy, which will consider the need for a buffer zone to protect the existing environmental assets within and adjacent to the North Industrial Zone. Proposals should also take account of flood risk in accordance with Local Plan Policy SD7.	The Proposed Development comprises the construction, operation (including maintenance where relevant) and decommissioning of up to an approximately 1.2-Gigawatt Thermal (GWth) Lower Heating Value (LHV) Carbon Capture (CC) enabled Hydrogen Production Facility (the 'Hydrogen Production Facility') located in Teesside, along with the pipeline infrastructure required to supply hydrogen (H2) to offtakers (customers) and the necessary utility connections. Carbon dioxide captured by the Proposed Development will be transported by pipeline to the separately consented Northern Endurance Partnership infrastructure on the adjacent Net Zero Teesside site for high-pressure compression and offshore transport and underground storage. The layout of the Main Site is such that the main buildings and structures are set well back from the boundary. The Proposed Development is also designed to mitigate the risk of flooding, which is categorised as low risk for the Main Site. For information on how the Proposed Development accords with RCBC Policies N4 and SD7 please refer to the individual responses above.
STDC12	South Tees Area SPD	North East Industrial Zone	Will encourage development proposals relating to advanced manufacturing,	The Proposed Development comprises the construction, operation (including maintenance where relevant) and



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			laboratory services and industrial and technology training. Proposals should accord with Local Plan Policies N4 and SD7.	decommissioning of an approximately 1.2-Gigawatt Thermal (GWth) Lower Heating Value (LHV) Carbon Capture (CC) enabled Hydrogen Production Facility (the 'Hydrogen Production Facility') located in Teesside, along with the pipeline infrastructure required to supply hydrogen (H2) to offtakers (customers) and the necessary utility connections. Carbon dioxide captured by the Proposed Development will be transported by pipeline to the separately consented Northern Endurance Partnership infrastructure on the adjacent Net Zero Teesside site for high-pressure compression and offshore transport and underground storage. For information on how the Proposed Development accords with RCBC Policies N4 and SD7 please refer to the individual responses above.
STDC15	South Tees SPD	Coastal Community Zone	The Council in partnership with STDC will support proposals for environmental enhancement, small- scale leisure and community uses and improved public access subject to compliance with Local Plan Policies N4, SD7 and HE2. Opportunities for renewable energy generation and energy storage will be explored.	The Proposed Development comprises the construction, operation (including maintenance where relevant) and decommissioning of up to an approximately 1.2-Gigawatt Thermal (GWth) Lower Heating Value (LHV) Carbon Capture (CC) enabled Hydrogen Production Facility (the 'Hydrogen Production Facility') located in Teesside, along with the pipeline infrastructure required to supply hydrogen (H2) to offtakers (customers) and the necessary utility connections. Carbon dioxide captured by the



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				Proposed Development will be transported by pipeline to the separately consented Northern Endurance Partnership infrastructure on the adjacent Net Zero Teesside site for high-pressure compression and offshore transport and underground storage.
				For information on how the Proposed Development accords with RCBC Policies N4, SD7 and HE2 please refer to the individual responses above.
SD1	STBC Local Plan	Presumption in favour of Sustainable Development	When considering development proposals, the Council will take a positive approach reflecting the presumption in favour of sustainable development within the NPPF.	The Proposed Development is consistent with and supports the principles of sustainable development by reusing brownfield land and providing 'Essential Infrastructure' that enables the decarbonisation of power and industry on Teesside.
SD2	STBC Local Plan	Strategic Development Needs	In order to provide sufficient employment sites to meet existing needs and new investment the Policy allocates land for employment, including 120 hectares for specialist uses, including the chemical and process industry, energy generation, waste processing, port-related uses and other uses, which demonstrate	The Hydrogen Distribution Network will cross areas of land that are identified for employment use. However, the routing largely follows existing pipeline corridors and as such there will be no material permanent impact on the availability of employment land in Stockton-on-Tees.



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			operational benefits to the North and South Tees Cluster.	
SD4	STBC Local Plan	Economic Growth Strategy	Economic development needs will be directed to appropriate locations to ensure the delivery of sustainable economic growth. The Policy states that The Seal Sands, North Tees and Billingham Chemical Complex areas are the main growth areas for a range of specialist uses, including energy generation and carbon capture and storage, which have operational benefits for the cluster.	The development of a clean hydrogen production facility together with a distribution network is consistent with Policy SD4. It will provide the required infrastructure that will allow a number of industries access to clean energy, with the assurance that the captured CO <sub>2</sub> emissions generated as part of the production process, will be transported for secure storage offshore.
SD5	STBC Local Plan	Natural, Built and Historic Environment	Seeks to conserve and enhance the natural, built and historic environment and meet the challenge of climate change, flooding and coastal change through a variety of methods, including supporting proposals for renewable and low carbon energy.	The Proposed Development involves the production of low carbon energy and related distribution infrastructure to offtakers within the Teesside area. It also provides a connection to infrastructure that will enable the capture CO <sub>2</sub> emissions from the production process. It will not result in unacceptable impacts on the natural or historic environment or increase the risk of flooding.
SD6	STBC Local Plan	Transport and Infrastructure Strategy	Seeks to promote and deliver a sustainable transport network.	A CTMP and a CWTP will be produced and secured via a Requirement in the draft DCO. Once approved it will be implemented during the construction stage to manage



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				traffic and transportation effects. Any potential future impacts from operational traffic will be negligible.
SD7	STBC Local Plan	Sustainable Design Principles	Development proposals should be designed to the highest possible standard, taking into consideration the context if the surrounding area, including matters such as landscape character and the need to protect and enhance ecological and green infrastructure networks and assets.	The Proposed Development has been designed in a manner which is appropriate in terms of its context and setting, which is mostly of an industrial nature, and it incorporates the principles of 'good design'. The elements of the Proposed Development within Stockton- on-Tees are limited to the hydrogen distribution network only. These will for the most part be installed below ground, use existing tunnels, or be upon existing pipe- racking and structures within existing infrastructure corridors on primarily existing or former industrial land. Due to the industrial nature of the area the connections will not be highly visible, nor materially alter the use or character of the land to which they relate. When selecting the various connections corridors, the approach has been to maintain separation from and limit effects upon sensitive receptors such as residential properties and areas of amenity of nature conservation value and minimise as far as possible the crossings of roads, railways and watercourses.
EG4	STBC Local Plan	Seal Sands, North Tees and Billingham	Development proposals for emerging specialist sectors will be directed to available sites and expansion land in	The hydrogen distribution network will cross areas of land that are identified by Policy EG4. However, the routing largely follows existing pipeline corridors and as



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			Billingham Chemical Complex, North Tees and Seal Sands. It will need to be demonstrated that development would not adversely impact on the protected nature conservation sites within the area.	such there will be no material permanent impact on the area of the availability of land for expansion or specialist sectors. There will be no adverse effects upon the integrity of the protected nature conservation sites.
EG5	STBC Local Plan	Durham Tees Valley Airport	Within the safeguarded area surrounding the Airport (identified on the Policies Map) it will be necessary to consult the operator of the Airport on relevant development proposals.	The infrastructure within this area consists of pipelines making up the Hydrogen distribution network and it is therefore not considered that there are any implications for Durham Tees Valley Airport.
T11	STBC Local Plan	Transport Infrastructure	Seeks to promote and deliver a sustainable transport network. Requires development proposals to be accompanied by an assessment of transport impacts and promote the use of sustainable modes through travel plans.	As referred to above, a CTMP and a CWTP will be produced and secured via a Requirement in the Draft DCO. Once approved it will be implemented during the construction stage to manage traffic and transportation effects. Any potential future impacts from operational traffic will be negligible.
ENV1	STBC Local Plan	Energy Efficiency	The Council will encourage all development to minimise the effects of climate change and will require all major development to demonstrate how it will contribute to the greenhouse gas emission reduction	The Proposed Development will produce clean hydrogen energy and provide a distribution network allowing various offtakers within the Teesside area to benefit from the use of clean energy. It will also connect to infrastructure that will allow transportation of CO2 emissions to a carbon storage area.



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			targets set out in the Stockton-on-Tees Climate Change Strategy 2016.	This will be a positive contribution to the decarbonisation of industry within the Teesside area. It therefore has the potential to make a significant contribution toward the reduction in $CO_2$ emissions from current levels with a beneficial effect on annual UK carbon emissions.
ENV2	STBC Local Plan	Renewable and Low Carbon Energy Generation	The Council encourages and supports the local production of energy from renewable and low carbon sources to help reduce carbon emissions and contribute towards the achievement of renewable energy targets.	Please refer to the response to Policy ENV1.
ENV4	STBC Local Plan	Reducing and Mitigating Flood Risk	All new development will be directed toward the areas of lowest flood risk an where it is proposed in Flood Zones 2 and 3 it must satisfy the sequential and exception tests and be supported by a flood risk assessment demonstrating it will be safe and not increase the risk of flooding.	Parts of the Proposed Development is located within Flood Zones 2 and 3, which is made up the pipelines that provide the Hydrogen Distribution Network. However, the Proposed Development is 'Essential Infrastructure' and is appropriate to those zones subject to satisfying the Exception Test. That test is satisfied on the basis that the Proposed Development will have very clear wider sustainability benefits to the community. It will contribute to the security of electricity supplies and provide infrastructure through the hydrogen distribution network to decarbonise local industries.



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				In addition to this the Proposed Development will provide significant employment and economic benefits. Furthermore, the FRA demonstrates that the Proposed Development, through the implementation of suitable mitigation, will be safe from the risk of flooding and will not increase the risk of flooding off-site.
ENV5	STBC Local Plan	Preserve, Protect and Enhance Ecological Networks, Biodiversity and Geodiversity	Seek to protect and enhance the biodiversity and geological resources within the Borough. This includes the protection, and where appropriate, enhancement of internationally designated nature conservation sites, nationally and locally designated sites. Development proposals should seek to achieve net gains in biodiversity wherever possible.	The ES and HRA confirm that the Proposed Development will not result in adverse effects on the integrity of the European sites or on other nature conservation interests. The Proposed Development includes landscape and biodiversity enhancement measures.
ENV7	STBC Local Plan	Ground, Air, Water, Noise and Light Pollution	Development proposals that may cause pollution will be required to incorporate measures to prevent or reduce pollution so as not to cause unacceptable impacts on residential amenity or the character and appearance of the surrounding area of environment. Development will not	The EIA for the Proposed Development has considered potential impacts in terms of air quality, noise and vibration, ground conditions, water and human health. Taking account of mitigation, the EIA has not identified any unacceptable impacts in respect of any of these assessment areas. The draft DCO includes a number of requirements that will secure various controls and measures to prevent any harmful effects. This includes



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			be permitted if it is considered that it will result in unacceptable effect on human health or the environment.	securing the approval of a lighting strategy to control any potential sources of light pollution as part of the CEMP (Requirement 15).
HE2	STBC Local Plan	Conserving and Enhancing Stockton's Heritage Assets	Development proposals should conserve and enhance heritage assets, including their setting, in a manner appropriate to their significance. This includes assets the Council has identified on a local listed, which are considered as having local heritage significance.	No designated heritage assets have been identified within the project boundary within Stockton-on-Tees. The hydrogen distribution network in Stockton largely follows existing pipeline corridors that cross existing or former industrial land. As such, no significant heritage effects are predicted. An archaeological Written Scheme of Investigation (WSI) will be submitted to STBC for approval. The WSI will be secured by Requirement 13 'Archaeology' of the draft DCO.
LS1	Hartlepool Local Plan	Locational Strategy	The development of Hartlepool will be based on a strategy of balanced urban growth with expansion being concentrated in areas adjoining the existing built up area and adjacent to areas of strong economic growth but ensuring growth occurs in a controlled way and is delivered alongside local and	The infrastructure associated with the Proposed Development within the Hartlepool area consists of pipelines that form part of the Hydrogen Distribution Network. This network provides the opportunity for offtakers to transform their business to rely on the use of clean and sustainable energy. The area affected by the Proposed Development is adjacent to the industrial areas located within STBC and



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			strategic infrastructure improvements which allow Hartlepool to grow in sustainable manner.	thus meets the requirements of the Hartlepool Local Plan Locational Strategy. Furthermore, the Proposed Development is strategic
				infrastructure and as such will enhance the opportunities for sustainable economic growth within the Hartlepool area.
EMP6	Hartlepool Local Plan	Underground Storage	Development of essential infrastructure must avoid areas of high hazard unless supported by a Flood Risk Assessment that demonstrates that flood risk can be effectively managed throughout the lifetime of the development.	A Preliminary Flood Risk Assessment (FRA) has been undertaken for the Proposed development. Some sections of the pipelines making up the Hydrogen Distribution Network are within Flood Zones 2 and 3. The pipelines with HBC are located within Flood Zone 3. However, as most of the pipes making up the Hydrogen Distribution Network will be located above ground and in an existing unattended service corridor it is therefore considered acceptable development within Flood Zone 3. Appropriate mitigation measures are proposed for the construction phase in this area of higher flood risk. These measures will be secured through the final CEMP which will be discharged by DCO Requirement, best practice and in consultation with the Environment Agency with regards to maintaining the integrity of the flood defences.



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INF2	Hartlepool Local Plan	Improving Connectivity in Hartlepool.	balance package of measures that seek to maximise the level of sustainable access to areas of development and through measures that develop further	A CTMP and a CWTP will be produced and secured via a DCO requirement. Once approved it will be implemented during the construction stage to manage traffic and transportation effects. Any potential future impacts from operational traffic will be negligible as the only infrastructure related to the Proposed Development within the Hartlepool area will be pipelines which form part of the Hydrogen distribution network.
NE1a	Hartlepool Local Plan	Natural Environment- Internationally designated sites	where appropriate enhanced taking into account an (a)- (c) hierarchy comprising the following: (a) Internationally designated sites	The Applicant have undertaken a HRA which concludes that for the construction, operational and decommissioning stages there will be no adverse effects on the integrity of any European site either alone or in combination with other plans and projects. The infrastructure associated with the Proposed Development within the Hartlepool area consists of



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			(c) Locally designated sites Part (a) explains that a precautionary approach will be taken towards developments that may have indirect impacts on internationally designated sites and appropriate mitigation measures or contributions to avoid detrimental impacts will be sought and delivered via the Hartlepool Mitigation Strategy and Delivery Plan and other mechanisms.	pipelines that form part of the Hydrogen Distribution Network. The routing of the pipelines has been selected to avoid environmentally sensitive areas. Where feasible pipelines will either be below ground or follow existing pipeline corridors to minimise any potential environmental effects.
NE1c	Hartlepool Local Plan	Natural Environment- Locally Wildlife sites	Sites designated for nature conservation will be protected, and where appropriate enhanced taking into account an (a)- (c) hierarchy comprising the following: (a) Internationally designated sites (b) Nationally designated sites (c) Locally designated sites Part (c) states that development which would adversely affect a locally designated site, which is not also	The infrastructure associated with the Proposed Development within the Hartlepool area consists of pipelines that form part of the Hydrogen Distribution Network. The routing of the pipelines has been selected to avoid environmentally sensitive areas. Where feasible pipelines will either be below ground or follow existing pipeline corridors to minimise any potential environmental effects.



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			allocated for another use in the Local Plan, will not be permitted unless the reasons for the development clearly outweigh the harm to the conservation interest of the site.	
MWC4	Minerals & Waste DPDs	Safeguarding of Mineral Resources from Sterilisation	Within minerals safeguarding areas, non-minerals development will only be permitted if it would not sterilise or prejudice future extraction of the resource; the mineral will be extracted prior to development; or the need for the development outweighs the need for the mineral resource.	The Joint Minerals and Waste DPDs are considered to be of limited relevance to the Proposed Development, as while some of the Proposed Development Site lies within a Minerals Safeguarding Area (MSA) and partly within a 'General Location for Large Waste Management Facilities', it is not subject to any site-specific minerals or waste policies and would not conflict with the objectives of these general allocations.
				Much of the Proposed Development area is or has previously been covered by industrial development or already contains pipelines and utilities corridors. The Main Site is identified for industrial and energy development and the Proposed Development would not alter or preclude the ability to access minerals for future extraction or accommodate waste facilities within the wider area.
				An operational safeguarding area exists around the following minerals extraction sites: Hart Quarry



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				(Hartlepool) extraction site. As this site is not within the boundary of the Proposed Development there will be no impact on its operation.
MWC8	Minerals & Waste DPDs	General Locations for Waste Management Sites	-	As the Proposed Development does not include the allocation or establishment of 'large waste management facilities', this Policy is not relevant and hence no specific response is provided.
MWC11	Minerals & Waste DPDs	Safeguarding of Port and Rail Facilities	Development which is proposed on or in the vicinity of certain safeguarded port and rail facilities (e.g. Tees Dock) will only be permitted where it would not prejudice the transportation of minerals and resources and waste materials by water and rail.	Only a very small area of the Proposed Development is located within the safeguarded wharf at Tees. Works in these areas are unlikely to be required and would not adversely or substantially impact access to the sites. The sites would not be sterilised by the development or render the sites inaccessible for future use nor will it impact on the transportation of minerals and resources and waste materials by water and rail.