

H2Teesside Project

Planning Inspectorate Reference: EN070009/APP/5.11

Land within the boroughs of Redcar and Cleveland and Stockton-on-Tees, Teesside and within the borough of Hartlepool, County Durham

Document Reference: 5.11: Schedule of Operational Mitigation and Monitoring

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



Applicant: H2 Teesside Ltd

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TABLE OF CONTENTS

1.0	INTRODUCTION.....	3
1.1	Background	3
1.2	Reference	4
1.3	Source Document	4
1.4	Mitigation.....	4
1.5	How the Mitigation is Secured	5
1.6	Is Monitoring Required?	5
2.0	SCHEDULE OF OPERATION PHASE MITIGATION AND MONITORING	6
3.0	REFERENCES	46

TABLES

Table 2-1:	Air Quality.....	6
Table 2-2:	Surface Water, Flood Risk and Water Resources	9
Table 2-3:	Geology, Hydrogeology and Contaminated Land	16
Table 2-4:	Noise and Vibration.....	19
Table 2-5:	Ecology and Nature Conservation.....	21
Table 2-6:	Ornithology.....	24
Table 2-7:	Marine Ecology	26
Table 2-8:	Traffic and Transport	28
Table 2-9:	Landscape and Visual Amenity	29
Table 2-10:	Cultural Heritage	32
Table 2-11:	Socio-Economics and Land Use	33
Table 2-12:	Climate Change	35
Table 2-13:	Major Accidents and Disasters	39
Table 2-14:	Materials and Waste Management.....	44
Table 2-15:	Human Health.....	45

1.0 INTRODUCTION

1.1 Background

1.1.1 This document identifies the mitigation measures identified through the Environmental Impact Assessment (“EIA”) process and which are reported in the Environmental Statement (“ES”) (EN070009/APP/6.2) for the operational phase of the Proposed Development and indicates how these measures are secured, such that interested parties can be confident in the delivery of these measures. This document does not cover the construction phase, as all mitigation measures for that phase are secured through their inclusion in the Framework Construction Environmental Management Plan (CEMP) and its assorted subsidiary plans and related documents listed below and the Requirement in the Draft DCO (EN070009/APP/4.1) for those documents to be developed into full versions for approval:

- Framework Construction Environmental Management Plan (EN070009/APP/5.12);
 - Appendices to the Framework CEMP:
 - Outline Site Waste Management Plan (EN070009/5.12.1);
 - Outline Water Management Plan (EN070009/5.12.2);
 - Indicative Lighting Strategy (Construction) (EN070009/5.12.3);
- Framework Construction Workers Travel Plan (EN070009/APP/5.15);
- Framework Construction Traffic Management Plan (EN070009/APP/5.16)

1.1.2 This document should be read in conjunction with:

- Indicative Lighting Strategy (Operation) (EN070009/APP/5.8); and
- the Environmental Permit (to be secured pursuant to a Requirement of the Draft DCO (EN070009/APP/4.1).

1.1.3 The mitigation measures are presented in a series of tables that include the following columns for each measure and which are explained further below:

- reference;
- source document;
- mitigation;
- how the mitigation is secured;
- phase of works;
- monitoring requirements;
- responsible party; and
- responsible regulatory organisation.

1.2 Reference

1.2.1 Each measure is prefixed with an identifier to indicate its type as follows:

- Embedded = EMB
- Essential = ESS
- Enhancement = ENH

1.2.2 A further reference is included to identify the environmental topic it relates to. For example, EMB-AQ1 means:

- EMB = the measure, action or commitment constitutes an embedded mitigation measure.
- AQ = the abbreviation for the topic to which the measure related, in this example it is Air Quality.
- 1 = the sequential reference number of the measure within the topic.

1.3 Source Document

1.3.1 The second column in each table identifies the document in which the mitigation is defined. The sources are the individual ES Chapters (Chapters 8 to 23) (ES Volume I, EN070009/APP/6.2).

1.4 Mitigation

1.4.1 The third column in each table identifies the individual mitigation measures. In some cases, these are summarised, but in all cases, the full measures can be seen by reference to the source document. The Proposed Development design process has been influenced by the EIA assessment findings and the feedback received during the statutory consultation process. The Proposed Development includes a range of measures incorporated into the design which serve to avoid or minimise environmental impacts.

1.4.2 The types of mitigation measures are defined in Chapter 2: Assessment Methodology (ES Volume I, EN070009/APP/6.2) and comprise the following:

- Embedded mitigation are modifications to the location, design or operation of the Proposed Development which have been designed to reduce its impacts and are an inherent part of the Proposed Development and so do not require additional action to be taken.
- Essential mitigation are measures required to reduce and if possible offset likely significant adverse environmental effects, identified in the environmental assessment. Essential mitigation measures are critical to the delivery of the project to achieve the significance of effects reported within the ES.
- Enhancement measures are those measures which may be delivered as part of the Proposed Development to achieve or improve on, a beneficial effect.

1.5 How the Mitigation is Secured

1.5.1 The fourth column in each table explains how the mitigation measure is secured. The types of securing mechanism vary, but include:

- A requirement listed in Schedule 2 of the Draft DCO (EN070009/APP/4.1) which can secure the measure itself or secures a plan which has to be prepared, submitted and approved (typically by the Local Planning Authority(ies) (LPA)) at a later date to discharge the listed measures. Each of the requirements can be discharged in respect of part of the Proposed Development, for example, so as to allow discharge in relation to a phase or an area of the works. The Requirements also require the Proposed Development to be brought forward in compliance with the parameters set out in the parameters schedule of the DCO and the Design and Access Statement (EN070009/APP/5.4).
- the Draft DCO requiring that development only occur within the limits of deviation shown on the Works Plans (EN070009/APP/2.4)
- A further consent, such as an Environmental Permit issued by the Environment Agency. Many of the operational mitigation measures that relate to environmental controls or health and safety for the Hydrogen Production Facility are secured in this manner. More detail on the other consents expected to be brought forward is set out in the Other Consents and Licences Statement (EN070009/APP/5.7).
- Regulatory requirements such as those imposed by the Control of Major Accident Hazards (“COMAH”) Regulations 2015. Many of the operational mitigation measures that relate to the safety of the hydrogen production facility are secured in this manner.

1.5.2 The enforcing authority for the requirements is generally the LPAs (in consultation with other bodies where applicable), whose jurisdiction extends to the mean low water springs.

1.6 Is Monitoring Required?

1.6.1 Where possible an indication is given in the fifth column of the table as to whether monitoring is likely to be required. However, in many cases, the need for monitoring will not be clear until a further document has been prepared or a subsequent consent agreed with a consenting body.

2.0 SCHEDULE OF OPERATION PHASE MITIGATION AND MONITORING

Table 2-1: Air Quality

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-AQ1	Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2)	<p><u>IED / BAT-AEL Emission Limit Value (ELV) Compliance</u></p> <p>The Hydrogen Production Facility will require an Environmental Permit and will comply with this under the Environmental Permitting (England and Wales) Regulations 2016. In addition, the Proposed Development will be operated in line with appropriate standards which have been reviewed with the Environment Agency during pre-application discussions. The operator will implement and maintain an Environment Management System (EMS) which will be attested to International Standards Organisation (ISO) 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.</p> <p>The Proposed Development will be designed such that process emissions to air comply with the Emission Limit Value (ELV) requirements as specified in the environmental permit. The applicable ELV requirements as per the Environment Agency's emerging techniques for hydrogen production with carbon capture guidance have been reviewed with the Environment Agency during pre-application engagement discussions. This will form part of the Environmental Permit Application with the Environment Agency. The</p>	Environmental Permit	Yes, through the Environmental Permit.

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		Environment Agency will then regulate the operation of the Proposed Development.		
EMB-AQ2	Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2)	<p><u>Stack Heights</u> The fired heater (for start-up only), auxiliary boiler and flare stack heights for the Proposed Development have been assessed as a worst case, with consideration given to minimisation of ground-level air quality impacts and the visual impacts of taller stacks based on the current concept design layout of the main structures of the Proposed Development.</p> <p>Dispersion modelling has been undertaken to determine the optimum stack heights at the current stage of design, through comparison of the maximum impacts at human health and ecological receptors, to ensure that the impacts at sensitive receptors will be considered to be acceptable.</p> <p>For the flare, the final release height is based on the results of the stack height assessment with the flare in emergency mode, as well as consideration of the minimum release height required for safety and design reasons.</p>	DCO Requirement requiring compliance with DCO Parameters Schedule	No
Essential Mitigation				
ESS-AQ1	Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2)	The air quality assessment of operational impacts assumes that the ELVs will be met for the operational plant as required under the Industrial Emissions Directive and in accordance with use of Best Available Techniques under the environmental permitting regime	Environmental Permit	Yes, through the Environmental Permit.

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		including the Environment Agency's emerging techniques for hydrogen production with carbon capture guidance.		
Enhancement Measures				
N/A	N/A	No enhancement measures related to air quality are proposed at this stage.	N/A	N/A

Table 2-2: Surface Water, Flood Risk and Water Resources

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-WAT1	Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2)	The Hydrogen Production Facility will require an Environmental Permit and will comply with this under the Environmental 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 EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
EMB-WAT2	Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2)	<p>Surface Water Drainage:</p> <p>A Detailed Surface Water Drainage Strategy will be prepared in consultation with the Environment Agency, the LLFAs (RCBC and STBC) and other statutory agencies and will be secured under a Requirement of the DCO. This will be in substantial accordance with the principles of the Drainage Strategy as outlined in the Indicative Surface Water Drainage Plan (EN070009/APP/2.12).</p> <p>It will provide adequate interception, conveyance, and treatment of surface water runoff from buildings and hard standing. This will be separate to foul systems for welfare facilities and process wastewater generated by the</p>	DCO Requirement	Any monitoring proposed as part of Detailed Surface Water Drainage Strategy or Environmental Permit

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<p>operation of the Proposed Development Site. The Connection Corridors will not require additional drainage as they will be using existing pipe racks, pipe bridges, culverts or otherwise installed underground.</p> <p>Uncontaminated surface water drainage will discharge either: 1) to the Tees Estuary via an existing Teesworks outfall; or 2) to Dabholm Gut (with any new pipework and outfall to be consented under a subsequent planning application).</p> <p>The strategy will propose the use of SuDS where possible, to enable attenuation of surface water flows due to increases in the impermeable area as a result of the Proposed Development. SuDS will also provide treatment of surface water runoff to ensure potential adverse effects on water quality in receiving watercourses are avoided. An attenuation pond will be present to provide storage.</p>		
EMB-WAT3	Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2)	<p>Chemical Use: Process operations on site will require the storage and use of a range of potentially polluting chemicals. The Detailed Surface Water Drainage Strategy and Environmental Permit will therefore provide that the drainage system for areas of site drainage that may contain chemical pollutants from minor leaks and spills (i.e., surface water drainage</p>	DCO Requirement and Environmental Permit	Any monitoring proposed as part of Detailed Surface Water Drainage Strategy or Environmental Permit

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<p>near chemical storage tanks or overlying pipework etc.) will be separated from the main 'clean' surface water drainage system using appropriate methods such as kerbs, bunds, sumps. An oily water drain will provide for collecting water from plant areas where oil may be present. Transformers and substations shall be located within kerbed areas. Lube-oil and transformer oil change-out shall be drained to portable drums with spillages contained by oil mats and good-practice clean-up. Used oils will be disposed of off-site. Drainage is routed by gravity via the oily water sewer to a below ground Oily Water Separator contained within the Oily Water Treatment Package. The liquids that are transferred to the Oily Water Treatment Package will be settled and filtered to remove hydrocarbons. Treated water discharged from the treatment package flows to the surface water attenuation pond. Oil removed in the treatment package is collected as waste and is disposed off-site by vacuum tankers.</p> <p>Drainage systems will be maintained and monitored in accordance with the Site EMS and Environmental Permit requirements.</p>		
EMB-WAT4	Chapter 9: Surface Water, Flood Risk and Water	Amine wastewater:	Environmental Permit	As required through the Environmental Permit

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
	Resources (ES Volume I, EN070009/APP/6.2)	The amine contaminated surface water drain is an independent hazardous segregated drain system. For equipment that contain amine, kerbed or bunded areas shall be provided to collect this fluid which is gravity fed to an Interceptor Pit. Here a sample will be taken to confirm if the contents of the sump meet the site criteria prior to pumping the sump contents to the main non-hazardous open drain. Contaminated fluid is disposed off-site by vacuum tankers.		
EMB-WAT5	Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2)	<p>Firewater containment:</p> <p>In addition to the above sources of surface water, under exceptional circumstances firewater may be generated. Fire-fighting water may contain chemicals that can be harmful to the water environment. Therefore, the Detailed Surface Water Drainage Strategy and Environmental Permit will include a retention basin to intercept the first flush of potentially contaminated fire-fighting water and divert it away from the existing surface water SuDS system. The contaminated fire water would then be stored and tested. Should contamination be present, this water will be directed to an oil separator (or pumped out for appropriate off-site disposal at a licensed waste facility depending on the extent of the contamination), or if considered clean, it will go to the stormwater attenuation pond. The storage requirements and the method by which</p>	DCO Requirement and Environmental Permit	Only if firewater is generated, which would be tested prior to being discharged

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		fire-fighting water is diverted (i.e. an automatic or manual operated system) will be further determined in consultation with the Environment Agency, LLFAs and the Fire Service post-DCO consent during detailed design. Storage across the drainage networks will be sufficient for the 10 hours of firewater plus leak scenario.		
EMB-WAT6	Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2)	A site Emergency Response Plan (prepared for Regulation 9 of the COMAH Regulations (Health and Safety Executive, 2015) will be in place for dealing with emergency situations involving loss of containment of hazardous substances. This will detail how to contain and control incidents to minimise the effects and limit danger to persons, the environment and property.	Environmental Permit and COMAH Licence	N/A
EMB-WAT7	Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2)	Pipelines will be subject to an Integrity Management Plan that will include, but not be limited to, Inline Inspection, Cathodic Protection surveys, visual inspections, and maintenance of associated equipment at frequencies informed by RBIs.	Site EMS	No
EMB-WAT8	Chapter 9: Surface Water, Flood Risk and Water Resources (ES	The Flood Risk Assessment contains a range of flood resilience and resistance mitigation measures have been considered to ensure the operation of the development is maintained during inundation, including:	Compliance with the FRA	No

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
	Volume I, EN070009/APP/6.2) Appendix 9A: Flood Risk Assessment (ES Volume III, EN070009/APP/6.4)	<ul style="list-style-type: none"> raising external ground levels - a minimum ground level of 6.83m AOD following remediation and earthworks at the Main Site ensures that the Proposed Development remains at 'low' risk of flooding during events that exceed a 0.5% AEP (1 in 200 chance) of flooding and the 0.1% AEP (1 in 1,000 chance) event; elevating critical plant equipment and/or internal finished floor levels above the peak flood inundation level. Critical equipment is located in Flood Zone 1, at low risk of flooding; flood resistant/resilient design; emergency/flood warning procedures including requirement for a Flood Emergency Response Plan and safe refuges 		
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to surface water, flood risk and water resources are proposed at this stage.	N/A	N/A
Enhancement Measures				
ENH-WAT1	Chapter 9: Surface Water, Flood Risk and Water Resources (ES	No enhancement measures related to surface water, flood risk and water resources are proposed at this stage. However, the Proposed Development has the potential to deliver certain benefits to the water environment over the existing situation, for example, through an improved	N/A	N/A

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
	Volume I, EN070009/APP/6.2)	drainage system compared to the existing site, utilising SuDS to improve the water quality of runoff that enters the Tees Estuary waterbody.		
ENH-WAT2	Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, EN070009/APP/6.2)	There will also be a reduction in nitrogen entering the sensitive areas of the Teesmouth and Cleveland Coast SPA/Ramsar site which are suffering from eutrophication (notably Seal Sands). The Proposed Development would use raw water (containing nitrogen) from the River Tees and potentially would discharge it to Tees Bay. Modelling indicates that this does not disperse back into the River Tees where the sensitive parts of the SPA/Ramsar site are located and will therefore contribute to reduced nutrient pressure on the sensitive area.	DCO Requirement	Any monitoring proposed as part of Detailed Surface Water Drainage Strategy or Environmental Permit

Table 2-3: Geology, Hydrogeology and Contaminated Land

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-GEO1	Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2)	The Hydrogen Production Facility will require an Environmental Permit and will comply with this under the Environmental Permitting (England and Wales) Regulations 2016 (HM Government, 2016). Prevention of contamination will be a specific requirement of the Environmental Permit for the operation of the Proposed Development Site. Therefore, it will be designed so that it will not create any new areas of ground contamination or pathways to receptors as a result of both construction and operation.	Environmental Permit	Yes, through the Environmental Permit.
EMB-GEO2	Chapter 10: Geology, Hydrogeology and Contaminated Land (ES Volume I, EN070009/APP/6.2)	The Proposed Development Site will be operated in line with appropriate standards, whilst the operator will implement and maintain an EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
EMB-GEO3	Chapter 10: Geology, Hydrogeology and Contaminated Land	Mitigation measures proposed during the operation of the Proposed Development Site include:	Environmental Permit	Yes, through the Environmental Permit.

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
	(ES Volume I, EN070009/APP/6.2)	<ul style="list-style-type: none"> the implementation of standard industry practices to mitigate potential impacts from accidental spills or leaks to comply with industry best practice; the storage and handling of processed chemicals will be undertaken in properly surfaced and bunded areas depending on the findings of the risk assessment that would support the environment permit application and permit conditions set by the regulator; implementation of rapid spill response planning and training depending on the findings of the risk assessment that would support the environment permit application and permit conditions set by the regulator; and the preparation of a groundwater quality monitoring plan depending on the findings of the controlled waters risk assessment (to be undertaken based on ground investigation data) that would support the environment permit application and permit conditions set by the regulator. 		
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to geology, hydrogeology and contaminated land are proposed at this stage.	N/A	N/A

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to geology, hydrogeology and contaminated land are proposed at this stage.	N/A	N/A

Table 2-4: Noise and Vibration

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-NVB1	Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2)	The control and monitoring of noise during operation will be secured by a Requirement under Schedule 2 of the Draft DCO (EN070009/APP/4.1).	DCO Requirement	Yes, pursuant to Requirement
EMB-NVB2	Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2)	The Hydrogen Production Facility will require an Environmental Permit and will comply with this under the Environmental Permitting (England and Wales) Regulations 2016. This will require operational noise from the Hydrogen Production Facility to be controlled using BAT, which will be determined through the Environmental Permit application.	Environmental Permit	Yes, through the Environmental Permit.
EMB-NVB3	Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2)	The Proposed Development Site will be operated in line with appropriate standards, whilst the operator will implement and maintain an EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
Essential Mitigation				
ESS-NVB1	Chapter 11: Noise and Vibration (ES Volume I, EN070009/APP/6.2)	During the detailed design stage mitigation measures and general principles to minimise noise will be considered as part of BAT. These measures may include, but not limited to the following depending on the potential benefits achieved from such measures:	DCO Requirement requiring noise management and monitoring plan to be	Yes, pursuant to Requirement

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<ul style="list-style-type: none"> • Partial enclosure of the open doors of the compressor houses by installing roller shutter doors to allow access for maintenance; • use of quieter fin fans (potential to reduce from 85 dB at 1 m to 80 dB at 1 m); and • orientation of plant within the site to provide screening of low-level noise sources by other buildings and structures, or orientating fans and the air inlets away from sensitive receptors. 	submitted confirming approach	
Enhancement Measures				
N/A	N/A	No enhancement measures related to noise and vibration are proposed at this stage.	N/A	N/A

Table 2-5: Ecology and Nature Conservation

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EN-ECO1	Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2)	The Production Facility will require an Environmental Permit and will comply with this under the Environmental 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 EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
Essential Mitigation				
ESS-ECO1	Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2)	The monitoring measures in the Outline Landscape and Biodiversity Management Plan will continue into the operational phase to make sure restored and enhanced habitats reach their target condition.	DCO Requirement	Yes, pursuant to the approved Plan
ESS-ECO2	Chapter 12: Ecology and Nature Conservation (ES Volume I, EN070009/APP/6.2)	Mitigation Licences for protected species. A Great Crested Newt District Level licence agreement was secured with Natural England. Current survey data does not show any direct impacts to water voles and therefore no need for a licence. However, water vole are present on those watercourses and update surveys will be	Protected Species Licence	Yes, as part of any Licence.

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<p>needed to check if there are any new burrows at the crossing point locations, once crossing points are fixed. If burrows are identified at that point, a licence will be sought.</p> <p>The Indicative Lighting Strategy (Operation) (EN070009/APP/5.8) details the measures proposed to control lighting during the operational phase of the Proposed Development. Any monitoring of habitats required for water vole will be detailed within the mitigation licence.</p>		
ESS-ECO3	Outline Landscape and Biodiversity Management Plan (EN070009/APP/5.9)	Where routeing around water courses and bankside vegetation is not possible, any impacted area of bankside vegetation will be replanted were feasible upon completion of the construction phase.	DCO Requirement	Yes, pursuant to the approved Plan
Enhancement Measures				
EN-ECO1	Planning Statement (EN070009/APP/5.2)	The Applicant's proposals for gains / enhancements are set out in the Outline Landscape and Biodiversity Management Plan (LBMP) (EN070009/APP/5.9). The measures in the latter will be developed into a Full LBMP to reflect the detailed design (and impacts) of the Proposed Scheme, in substantial accordance with that outline. 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	DCO Requirement Section 106 Agreement	Likely yes, subject to final proposals.

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		working with stakeholders such as the EA, Natural England and RPSB to develop proposals in this regard. It is hoped that such measures, to be secured through a section 106 Agreement, will be able to demonstrate a wider qualitative net gain overall as a result of the Proposed Development.		

Table 2-6: Ornithology

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EN-ORN1	Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2)	The Hydrogen Production Facility will require an Environmental Permit and will comply with this under the Environmental 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 EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
EN-ORN2	Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2)	The final stack height for the Proposed Development has been optimised with consideration given to the minimisation of ground-level air quality (including nitrogen emissions) impacts on relevant ornithological features, such that deposition thresholds for habitats that support relevant ornithology features are not adversely exceeded by the operational Hydrogen Production Facility.	DCO Requirement requiring compliance with DCO Parameters Schedule	No
EN-ORN3	Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2)	An Indicative Lighting Strategy (Operation) (EN070009/APP/5.8) has been prepared to demonstrate how lighting impacts on sensitive ornithological features, including birds, have been considered and addressed in the development design and to ensure that light spill to sensitive ornithological receptors is limited to levels that will have no detectable adverse effect on	DCO Requirement	No

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		those receptors. This will be developed into a full lighting strategy, pursuant to a Requirement in the Draft DCO (EN070009/APP/4.1). It is not anticipated that lighting will be required across the connection corridors, over and above any existing lighting, during the operational phase of the Proposed Development.		
Essential Mitigation				
ESS-ORN1	Chapter 13: Ornithology (ES Volume I, EN070009/APP/6.2)	The monitoring measures in the Outline Landscape and Biodiversity Management Plan (EN070009/APP/5.9) will continue into the operational phase to make sure restored and enhanced habitats reach their target condition	DCO Requirement	Yes, pursuant to the approved Plan
Enhancement Measures				
N/A	N/A	No enhancement measures related to ornithology are proposed at this stage.	N/A	N/A

Table 2-7: Marine Ecology

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-MARE1	Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2)	<p><u>Management of Construction Surface Water Runoff and Marine Water Quality</u></p> <p>A Detailed Surface Water Drainage Strategy will be in place during the operation of the Proposed Development, which will be defined through consultation with the Environment Agency, the LLFA (RCBC and STBC) and other statutory agencies.</p>	DCO Requirement	Yes, as part of approved Detailed Surface Water Drainage Strategy
EMB-MARE2	Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2)	It is envisaged that a Surface Water Maintenance and Management Plan will be developed by the future site operator, detailing information relating to access, and maintenance of the different Sustainable Drainage Systems (SuDS) and surface water features proposed on the Proposed Development Site.	DCO Requirement	Any monitoring proposed as part of Surface Water Drainage Maintenance and Management Plan
EMB-MARE3	Chapter 14: Marine Ecology (ES Volume I, EN070009/APP/6.2)	<p><u>Management of Operational Lighting</u></p> <p>A Lighting Strategy will be implemented to reduce the effects of artificial light on site during the operational phase of the Proposed Development, with several mitigation measures incorporated including careful placement of lighting columns, using lamps with a limited UV spectrum in locations which might affect ecological receptors, and directing luminaires away from ecologically sensitive receptors. This will be in</p>	DCO Requirement	No

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		substantial accordance with the Indicative Lighting Strategy (Operation) (EN070009/APP/5.8).		
EMB-MARE4	Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2)	<p><u>Management of Nitrogen Depositions</u></p> <p>The Proposed Development will be designed so that all process emissions to the air comply with the Emissions Limit Value agreed in the environmental permit. The Environment Agency will also regulate the operation of the Proposed Development.</p> <p>Further information can be found in Chapter 8: Air Quality (ES Volume I, EN070009/APP/6.2).</p>	Environmental Permit	Yes, through the Environmental Permit.
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to marine ecology are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to marine ecology are proposed at this stage.	N/A	N/A

Table 2-8: Traffic and Transport

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-TRA1	Chapter 15: Traffic and Transport (ES Volume I, EN070009/APP/6.2)	During 28-day maintenance periods which are likely to occur approximately every four years, any impact of this would, subject to consultation with the LPA, be managed through the adoption of a plant turnaround travel plan, produced by the Applicant as required.	DCO Requirement	No
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to traffic and transport are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to traffic and transport are proposed at this stage.	N/A	N/A

Table 2-9: Landscape and Visual Amenity

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-LAN1	Chapter 16: Landscape and Visual Amenity (ES Volume I, EN070009/APP/6.2)	<p>The following impact avoidance measures (i.e., those that are inherent to the design of the Proposed Development) are embedded into the Proposed Development design and also help to avoid and/ or reduce impacts to landscape and visual amenity during the construction and operational phases of the Proposed Development. These measures have therefore been taken into account during the impact assessment process described in this chapter:</p> <ul style="list-style-type: none"> • Above Ground Pipelines – The above ground pipeline will be routed in designated pipeline corridors with existing pipeline infrastructure as illustrated in Figure 5-2 Indicative Pipeline Routing (ES Volume II EN070009/APP/6.3). New pipelines will be installed in parallel to one side of existing pipelines where practicable, therefore reducing the visual effect; • Buried Pipelines – where the pipeline route does not make use of existing infrastructure; • Trenchless Crossings – where practicable, trenchless construction technologies (e.g. HDD) are the preferred method for the Connection Corridors to avoid watercourses, railways, roads and utilities infrastructure 	DCO Requirement for detailed design, lighting strategy and limits of deviation on Works Plans	No

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<p>(refer to Chapter 5: Construction Programme and Management (ES Volume I, EN070009/APP/6.2);</p> <ul style="list-style-type: none"> • the design principles of the Proposed Development are outlined in Design and Access Statement (EN070009/APP/5.4) and secured through the DCO and include providing for suitable materials to be used, where practicable, in the construction of structures to reduce reflections and to assist with breaking up the massing of the buildings and structures. • The selection of finishes for the buildings and other infrastructure will be informed by the finishes of the adjacent developments to reduce the visual impact of the Proposed Development; and • Lighting required during the construction and operation stages of the Proposed Development will be designed, positioned, and directed to prevent or minimise light disturbance to nearby residents. Where needed and appropriate, lighting to site boundaries will be provided, and illumination will be sufficient to provide a safe route for passing public. Precautions will be taken to avoid shadows cast by the site hoarding on surrounding footpaths, roads and amenity areas. Where appropriate, lighting will be activated by motion sensors to prevent unnecessary usage. Lighting requirements for the operational stage are set out in the Indicative Lighting 		

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		Strategy (Operation) (EN070009/APP/5.8) which will inform a final strategy to be approved by the LPA pursuant to a DCO Requirement.		
EMB-LAN2	Chapter 16: Landscape and Visual Amenity (ES Volume I, EN070009/APP/6.2)	At Cowpen Bewley Woodland Park 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. An Outline LBMP (EN070009/APP/5.9) outlines the implementation of planting and biodiversity measures and includes an outline of establishment and long-term maintenance.	DCO Requirement	Pursuant to approved plan
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to landscape and visual amenity are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to landscape and visual amenity are proposed at this stage.	N/A	N/A

Table 2-10: Cultural Heritage

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-CH1	Chapter 17: Cultural Heritage (ES Volume I, EN070009/APP/6.2)	In line with the design and impact avoidance measures during the construction stage, lighting required during the operational stage of the Proposed Development has been designed, positioned, and directed to prevent or minimise light spill, presented in the Indicative Lighting Strategy (Operation) (EN070009/APP/5.8). There are no other embedded mitigation measures identified for cultural heritage assets applicable to the operational stage of the Proposed Development.	DCO Requirement	No
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to cultural heritage are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to cultural heritage are proposed at this stage.	N/A	N/A

Table 2-11: Socio-Economics and Land Use

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-SOC1	Chapter 18: Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2)	The Proposed Development will comply with the Environmental Permitting (England and Wales) Regulations 2016 under its Environmental Permit so that any impacts of emissions to air, soil, surface water and groundwater on the environment and human health will be minimised and avoided where possible.	Environmental Permit	Yes, through the Environmental Permit.
EMB-SOC2	Chapter 18: Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2)	Operational impacts will be controlled by the Environmental Permit and an EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
Essential Mitigation				
ESS-SOC1	Chapter 18: Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2)	Replacement woodland park provision will be provided, to be laid out in agreement with the local planning authority.	DCO Special Category Land Article	N/A
Enhancement Measures				
ENH-SOC1	Chapter 18: Socio-economics and Land Use (ES Volume I, EN070009/APP/6.2)	The employment effects will be enhanced by the Applicant providing support to local businesses and stakeholders and supporting skills development at the Proposed	DCO Requirement	Potentially as part of approved skills and employment strategy

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		Development. This is secured via a DCO Requirement requiring a skills and employment strategy to be developed.		

Table 2-12: Climate Change

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-CC1	Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2)	<u>GHG Impact Assessment:</u> The main mitigation strategy is carbon capture which is designed to capture at least 95% of the emissions resulting from the Proposed Development operation. The capture rate will be regulated through the Environmental permit.	Carbon Capture Rate and operation of the Proposed Development through Environmental Permit	Yes, through Environmental Permit
EMB-CC2	Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2)	<u>GHG Impact Assessment:</u> Process emissions, mainly CO ₂ , H ₂ and CH ₄ , would be managed and regulated through an Environmental Permit issued by the Environment Agency in accordance with the Environmental Permitting (England and Wales) Regulations (HM Government, 2016). The permit application will present a number of measures that the Proposed Development will include in order to improve energy efficiency and to reduce overall GHG emissions.	Environmental Permit	Yes, through Environmental Permit
EMB-CC3	Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2)	<u>GHG Impact Assessment:</u> 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 be attested to International Standards Organisation (ISO) 14001 (International	EMS	Yes, through the EMS

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<p>Organisation for Standardization, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard. Mitigation actions will also be taken in line with government best practice for blue hydrogen (HM Government, 2023). Monitoring and reporting will also be taken in line with the low carbon hydrogen standard section 8 which requires monitoring and reporting of GHG intensity of Hydrogen to DESNZ, which will form part of the requirements of any funding support received (DESNZ, 2023).</p>		
EMB-CC4	Chapter 19: Climate Change (ES Volume I, EN070009/APP/6.2)	<p><u>GHG Impact Assessment:</u> Additional maintenance and mitigation measures will include the following appropriate measures in accordance with the use of BAT:</p> <ul style="list-style-type: none"> • minimising flaring and venting of gases in operation; • minimising leakage and fugitive emissions of H₂ and using trace processes; • minimising of H₂, CO₂ and CH₄ leakage in the Connection Corridors; • use of energy efficient lighting; • optimisation of overall auto thermal reforming process; • regular maintenance every four years; 	Environmental Permit	No

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<ul style="list-style-type: none"> • flaring rather than venting, where emissions cannot be eliminated and where practicable; • plant design to maximise equipment availability and reliability; • avoiding routine flaring for waste gas destruction; • managing production of off-gas and balancing against requirements for fuel gas; • using procedures to define operations, including start-up and shutdown, maintenance work and cleaning; • using commissioning and handover procedures to ensure that the plant is installed in line with the design requirements; • using return-to-service procedures to ensure that the plant is recommissioned and handed over in line with the operational requirements; • designing flaring devices to enable smokeless and reliable operations, and to ensure an efficient combustion of excess gases when flaring under other than normal operations; and • monitoring and reporting of gas sent to flaring and associated parameters of combustion. 		

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Essential Mitigation				
N/A	N/A	No essential measures related to climate change are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to climate change are proposed at this stage.	N/A	N/A

Table 2-13: Major Accidents and Disasters

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-MAD1	Chapter 20: Major Accidents and Disasters Conservation (ES Volume I, EN070009/APP/6.2)	The engineering design of the Proposed Development will incorporate a number of philosophies with regard to process safety and safeguarding, isolation, emergency shutdown and depressurisation. The layout of the Main Site will give due consideration to Inherently Safer Design (ISD) principles with respect to both on-site and off-site receptors.	COMAH Licence	Requirements of COMAH Regulatory Process
EMB-MAD2	Chapter 20: Major Accidents and Disasters Conservation (ES Volume I, EN070009/APP/6.2)	During the Proposed Development design stages, the future operational risks will be managed via a number of studies such as Site Quantitative Risk Assessment (QRA), preliminary Consequence Modelling, Hazard Identification (HAZID) studies, Fire Hazard Analysis (FHA) and Explosion Hazard Analysis (EHA), and Hazard and Operability (HAZOP) studies. These studies have been, and will continue to be, carried out for the Proposed Development during the ongoing design process. This is a standard approach for the systematic identification of hazards and the development of barriers and other risk mitigation measures for preventing, or otherwise minimising, hazardous scenarios to ALARP through appropriate design during the Front-End Engineering Design (FEED) and the subsequent detailed design stages.	COMAH Licence	Requirements of COMAH Regulatory Process

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
EMB-MAD3	Chapter 20: Major Accidents and Disasters Conservation (ES Volume I, EN070009/APP/6.2)	The Proposed Development will be operated in line with appropriate standards, whilst the operator will implement and maintain an EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline the requirements and procedures needed to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through Environmental Permit
EMB-MAD4	Chapter 20: Major Accidents and Disasters Conservation (ES Volume I, EN070009/APP/6.2)	The Hydrogen Production Facility will require an Environmental Permit under the Environmental Permitting (England and Wales) Regulations 2016 (HM Government, 2016). The Environmental Permit places a number of stipulations and requirements to be fulfilled to the satisfaction of the regulators, including the use of appropriate control and monitoring procedures, risk assessments, management systems and control measures; to minimise the risk of accidents occurring and to minimise the effects of any such accidents on off-site receptors as well as the operational workforce. The permit requires the approach to managing accidents and emergencies to be in accordance with the use of Best Available Techniques (BAT). The Applicant will participate in an enhanced application scheme with the Environment Agency (EA), whereby BAT requirements and conditions are discussed as the design progresses, to ensure that design of the Proposed Development will be suitable for the Environmental Permit application.	Environmental Permit	Yes, through Environmental Permit

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
EMB-MAD5	Chapter 20: Major Accidents and Disasters Conservation (ES Volume I, EN070009/APP/6.2)	Due to the expected inventory of dangerous substances, which will be present on-site, the Proposed Development is anticipated to be an Upper Tier COMAH installation. The COMAH status will be reviewed as the design develops. COMAH notifications are required to be submitted to the Competent Authority (CA), which comprises the HSE and the EA, three to six months prior to the start of the construction phase. Major accident assessments and studies will be prepared over the course of the design of the Proposed Development, and a Safety Case Report and a Major Accident Prevention Plan (MAPP) will be prepared to support the COMAH notification. The COMAH Safety Case Report will include appropriate risk assessments in line with the HSE Safety Report Assessment Manual (SRAM) criteria, which is used to demonstrate that the application is Duly Made to the regulator. The Safety Case Report will also include appropriate risk assessments in relation to Major Accidents to The Environment (MATTEs).	COMAH Regulatory Process	Requirements of COMAH Regulatory Process
EMB-MAD6	Chapter 20: Major Accidents and Disasters Conservation (ES Volume I, EN070009/APP/6.2)	Other consents that will be required, which are relevant to the design and impact avoidance / minimisation with respect to MA&Ds include, but are not limited to the following: <ul style="list-style-type: none"> • A Hazardous Substances Consent will be obtained from the local planning authority (RCBC) who would consult with the HSE in compliance with The Planning (Hazardous 	COMAH and HSC Regulatory Processes	Requirements of COMAH and HSC Regulatory Processes

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		<p>Substances) Regulations (HM Government, 2015). A flowchart summarising the process of the Hazardous Substances Consent application process is presented in Appendix 20B (ES Volume III, EN070009/APP/6.4);</p> <ul style="list-style-type: none"> • A Gas Safety Case will be submitted to the HSE prior to the start of construction of the Natural Gas Corridor in compliance with The Gas Safety (Management) Regulations (HM Government, 1996a); and • Pipeline Safety Notifications will be submitted to the HSE a minimum of six months prior to the start of construction and 14 days before first use of the Connection Corridors in compliance with the Pipeline Safety Regulations (HM Government, 1996b). 		
EMB-MAD7	Chapter 20: Major Accidents and Disasters Conservation (ES Volume I, EN070009/APP/6.2)	<p><u>Domino Effects:</u> As part of COMAH the Proposed Development will need to generate an on-site Emergency Plan that “dovetails” with the offsite Local Authority Emergency Plans. It is a requirement of the COMAH Regulations that neighbouring upper tier sites should review and update their Emergency Plans and Safety Reports to take into consideration potential impact of domino sites, which could potentially include this Proposed Development. This ensures that domino effects are assessed in detail by major accident installations. Domino effects are currently being considered and appropriate discussions will be</p>	COMAH Regulatory Process	Requirements of COMAH Regulatory Process

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
		held with affected sites as the COMAH Safety Report is prepared for approval by the HSE.		
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to major accidents and disasters are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to major accidents and disasters are proposed at this stage.	N/A	N/A

Table 2-14: Materials and Waste Management

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-MW1	Chapter 21: Materials and Waste Management (ES Volume I, EN070009/APP/6.2)	The Hydrogen_Production Facility will require an Environmental Permit and will comply with this under the Environmental Permitting (England and Wales) Regulations 2016. The permit will include procedures for the management of materials and waste in accordance with relevant legislation.	Environmental Permit	Yes, through the Environmental Permit.
EMB-MW2	Chapter 21: Materials and Waste Management (ES Volume I, EN070009/APP/6.2)	The Proposed Development will be operated in line with appropriate standards, whilst the operator will implement and maintain an EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to materials and waste management are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to materials and waste management are proposed at this stage.	N/A	N/A

Table 2-15: Human Health

REFERENCE	SOURCE DOCUMENT	MITIGATION	HOW THE MITIGATION IS SECURED	MONITORING REQUIRED? YES/NO/N/A
Embedded Mitigation				
EMB-HH1	Chapter 22: Human Health (ES Volume I, EN070009/APP/6.2)	The human health assessment assumes that the Hydrogen Production Facility will require an Environmental Permit and will comply with this under the Environmental Permitting (England and Wales) Regulations 2016 (HM Government, 2016). In addition, the Proposed Development will be operated in line with appropriate standards, whilst the operator will implement and maintain an EMS which will be attested to ISO 14001 (ISO, 2015). The EMS will outline requirements and procedures required to ensure that the Proposed Development Site is operating to the appropriate standard.	Environmental Permit	Yes, through the Environmental Permit.
Essential Mitigation				
N/A	N/A	No essential mitigation measures related to human health are proposed at this stage.	N/A	N/A
Enhancement Measures				
N/A	N/A	No enhancement measures related to human health are proposed at this stage.	N/A	N/A

3.0 REFERENCES

- Department for Energy Security and Net Zero (DESNZ) (2023). *UK Low Carbon Hydrogen Standard, London: UK Government.*
- HM Government (1996a). *The Gas Safety (Management) Regulations (SI 1996 No. 551).*
- HM Government (1996b). *The Pipelines Safety Regulations 1996 (SI 1996/825).*
- HM Government (2015). *The Planning (Hazardous Substances) Regulations 2015 (SI 2015/627).*
- HM Government (2016). *Environmental Permitting (England and Wales) Regulations 2016.*
- HM Government (2023). *Emerging techniques for hydrogen production with carbon capture.*
- Health and Safety Executive (HSE) (2015). *Control Of Major Accident Hazards Regulations 2015 (COMAH).*
- International Organization for Standardization (2015). *ISO 14001:2015 Environmental Management Systems. Geneva: International Organisation for Standardisation.*