



# Immingham Green Energy Terminal

TR030008

Volume 6

## 6.6 Outline Decommissioning Environmental Management Plan

Planning Act 2008

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009 (as  
amended)

September 2023

# Infrastructure Planning

## Planning Act 2008

The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009 (as amended)

# Immingham Green Energy Terminal

## Development Consent Order 2023

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### 6.6 Outline Decommissioning Environmental Management Plan

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## Executive Summary

This Outline Decommissioning Environmental Management Plan (“DEMP”) accompanies a proposed application (‘the Application’) to be made by ABP to the Secretary of State (“SoS”) for Transport, seeking development consent to construct, operate and maintain the Immingham Green Energy Terminal. The Terminal would facilitate the import and export of liquid bulks associated with the energy sector and is supported by associated development on the landside.

Subject to the grant of consent for the Project by the SoS, Final DEMPs (including relevant supporting plans) will be provided in relation to relevant parts of the Project in accordance with the measures contained within this Outline DEMP following the appointment of the contractor(s), as set out in the **draft Development Consent Order (“DCO”) [TR030008/APP/2.1]**.

This Outline DEMP demonstrates how the mitigation measures outlined in the ES **[TR030008/APP/6.2]** expressly related to decommissioning will be implemented and sets out the monitoring and auditing activities designed to ensure that such mitigation measures are carried out, and that they are effective.

The main part of the Outline DEMP is Section 3: Mitigation and Monitoring. This section of the Outline DEMP sets out the mitigation measures to be included as a minimum in the Final DEMP(s). These measures are drawn directly from the technical chapters of the ES **[TR030008/APP/6.2]** or state best practice measures that would be followed. It also illustrates how the monitoring strategy will be set out and the responsible party identified for each mitigation measure or monitoring requirement.

This Outline DEMP provides a framework structure for the Final DEMP(s) and contains information that will inform its development. The Final DEMP(s) would be produced before the decommissioning of the Project following the appointment of a contractor to undertake such decommissioning, in line with this Outline DEMP.

# 1 Introduction

## 1.1 Overview

- 1.1.1 This Outline Decommissioning Environmental Management Plan (“DEMP”) has been prepared by AECOM Ltd (“AECOM”) on behalf of Associated British Ports (“ABP”) (“the Applicant”). It accompanies a proposed application (‘the Application’) to be made to the Secretary of State (“SoS”) for Transport seeking Development Consent to construct, operate and maintain a multi-user green energy terminal to facilitate the import and export of bulk liquids associated with the energy sector, together with associated development. The terminal consists of a jetty and associated landside infrastructure (including jetty access ramp), loading/unloading infrastructure, and pipelines, which would be located on land and in the marine area on the eastern side of the Port of Immingham (“the Port”), as well as associated development (collectively termed “the Project” and the land on which the Project is to be constructed termed “the Site”). A part of the associated development is the construction and operation of a green hydrogen production facility for the production of green hydrogen from imported ammonia on site by Air Products BR Limited (“AP”).
- 1.1.2 Decommissioning of the Project will likely comprise the removal of all landside infrastructure associated with the Project and leaving underground infrastructure such as pipelines, piles, foundations, culverts and drainage in situ and making them safe. All above ground infrastructure associated with the landside elements of the Project would likely be dismantled and all materials removed would be reused or recycled where possible or disposed of in accordance with relevant waste disposal regulations at the time of decommissioning. Land would be restored to a satisfactory state as required by the Environmental Permit.
- 1.1.3 The landside elements of the Project have a design life of up to approximately 25 years, although the operational life could be longer, depending on its integrity and market conditions at that time. When appropriate, this infrastructure would be decommissioned.
- 1.1.4 Decommissioning would be undertaken safely, in line with specific procedures and subject to risk assessment and permit to work schemes, and with regard to the environmental legislation at the time of decommissioning. The required licences and permits would also be acquired.
- 1.1.5 The Project does not make any provision for the decommissioning of the main elements of the Terminal. This is because the jetty, jetty head, loading platforms, access roads and access ramps would, once constructed, become part of the fabric of the Port estate and would, in simple terms, continue to be maintained so that they could be used for port-related activities to meet a long-term need. However plant and equipment on the jetty topside used in association with landside infrastructure may be decommissioned at the same at decommissioning of the relevant landside infrastructure.

- 1.1.6 An Environmental Impact Assessment (“EIA”) has been undertaken for the Project and an ES has been prepared in accordance with the Infrastructure Planning (EIA) Regulations 2017 (“the EIA Regulations”) (Ref 1-1). The Environmental Statement (“ES”) [TR030008/APP/6.2] contains the assessment of the likely significant effects on the environment that may occur during the construction, operation and decommissioning of the Project and describes the mitigation measures for such effects.
- 1.1.7 The purpose of this Outline DEMP is to demonstrate how the mitigation measures outlined in the ES [TR030008/APP/6.2] expressly related to decommissioning will be implemented and sets out the monitoring and auditing activities designed to ensure that such mitigation measures are carried out, and that they are effective. Construction and operational activities are not addressed in this document; these are subject to separate environmental management plans and procedures.
- 1.1.8 This Outline DEMP provides a framework structure for the Final DEMP(s) and contains information that will inform its development. The Final DEMP(s) would be produced before the decommissioning of the Project following the appointment of a contractor to undertake such decommissioning, in line with this Outline DEMP.
- 1.1.9 Final DEMP(s) may be produced for individual phases and/or individual Work Nos in accordance with the measures contained within this Outline DEMP.
- 1.1.10 Key information included within this Outline DEMP includes:
- An overview of the Project, decommissioning activities and programme.
  - Assessment of likely significant environmental impacts (through the EIA).
  - Mitigation measures to minimise or prevent potential adverse impacts.
  - Monitoring of effectiveness of mitigation measures.
  - Corrective action procedure.
  - Links to other complementary plans and procedures.
- 1.2 The Applicant
- 1.2.1 The Applicant, ABP, has submitted the Development Consent Order (“DCO”) Application for the construction, operation and decommissioning of the Project.
- 1.2.2 ABP was established in 1981 following the privatisation of the British Transport Docks Board. It is the largest ports group in the United Kingdom, owning and operating 21 ports and other transport-related businesses across England, Wales and Scotland.
- 1.2.3 On the Humber, ABP owns and operates four ports, namely the Port of Immingham and the ports of Hull, Grimsby and Goole, which together constitute the largest ports complex in the UK. The Port of Immingham is the largest and busiest of ABP’s Humber ports.

- 1.2.4 ABP's statutory undertaking at Immingham, the 'statutory port estate', covers some 480 hectares (ha). The majority of the port estate falls within the administrative boundary of North East Lincolnshire Council ("NELC"), although the western part of the Port falls within the administrative boundary of North Lincolnshire Council ("NLC").
- 1.2.5 The Port comprises a number of discrete operational areas handling a diverse trade base including liquid fuels, solid fuels, ores, and ro-ro freight being handled from existing in-river jetties. These include the Eastern and Western Jetties, the Immingham Oil Terminal, the Immingham Gas Terminal, Immingham Outer Harbour and the Humber International Terminal ("HIT").
- 1.2.6 The Project, if consented, will be located fully within an extended Port of Immingham Statutory Harbour Authority ("SHA") area where the Applicant is the SHA. In this capacity, the Applicant is responsible, with a set of powers and duties which include the management and regulation of the safety of navigation and marine operations in its SHA area.
- 1.3 Air Products BR Ltd ("AP")
- 1.3.1 AP is a world-leading industrial gases company, with 35 production facilities across the UK and Ireland, in addition to a number of hydrogen refuelling stations and hydrogen, nitrogen and oxygen plants.
- 1.4 The Project
- 1.4.1 In summary, the Project would comprise:
- a. The Nationally Significant Infrastructure project ("NSIP"), **Work No. 1**, comprising:

On the marine side, a Terminal for liquid bulks, comprising:

    - i A jetty (defined by **Work No. 1a**) including a loading platform, associated dolphins, fenders and walkways, topside infrastructure but not limited to control rooms, marine loading arms, pipe-racks, pipelines and other infrastructure.
    - ii A single berth, with a berthing pocket with a depth of up to 14.5m below chart datum.
    - ii related landside infrastructure including, but not limited to, a jetty access ramp, a flood defence access ramp and works to raise the seawall locally under the jetty access ramp.
  - b. Associated Development on the landside, comprising:
    - i A corridor between the new jetty and Laporte Road which would support a private road (the 'jetty access road'), pipe-racks, pipelines to enable the ammonia import to the East Site, as well as security gates, a security building, a power distribution building and associated utilities – (**Work No. 2**).
    - ii 'East Site - Ammonia Storage' (**Work No. 3**) on which an ammonia storage tank and related plant including an ammonia tank flare stack



would be constructed (**Work No. 3a**) as well as additional buildings (including welfare building, power distribution building and a process instrumentation building), pipe-racks, pipelines, pipes, cable-racks, utilities and other infrastructure.

- iii Construction of a culvert (**Work No. 4**) under Laporte Road for pipelines, pipes and cables and other conducting media linking the two parts of the East Site.
- iv 'East Site – Hydrogen Production Facility' (**Work No. 5**) on which up to three hydrogen production units and associated plant including flue gas stacks and flare stacks would be constructed (**Work No. 5a**) together with additional buildings (including process control building, power distribution buildings, process instrumentation buildings, analyser shelters), pipe-racks, pipelines, pipes, utilities and other infrastructure.
- v Underground pipelines, pipes, cables and other conducting media (**Work No. 6**), between the East and West Sites, for the transfer of ammonia, hydrogen, nitrogen and utilities, with cathodic protection against saline corrosion.
- vi 'West Site' (**Work No. 7**) involving the construction of up to three hydrogen production units with associated flue gas stacks and flare stacks and up to four liquefier units (**Work No. 7a** and **Work No. 7b** combined); hydrogen storage tanks, hydrogen trailer filling stations, a hydrogen vent stack and associated process equipment (**Work No. 7c**); and hydrogen vehicle and trailer filling stations, hydrogen compressors and associated process equipment (**Work No. 7d**). Also additional buildings (including but not limited to control room and workshop building, security and visitor building, contractor building, warehouse, driver administration building, safe haven building, electrical substation and metering station, power distribution buildings, process instrumentation buildings, analyser buildings and additional temporary buildings during construction), process and utility plant including cooling towers and pumps, fire water tank, instrument air equipment, pipe-racks, pipelines, pipes, cable-racks, utilities and other infrastructure.
- vii Formation of temporary construction and laydown areas on Queens Road (**Work No. 8**) and off Laporte Road (**Work No. 9**).
- viii Temporary removal of street furniture and modification of overhead cables on Kings Road (**Work No. 10**) associated with the transport of large construction components from the Port to the Site.

1.4.2 Further information on the Project is provided in **Chapter 2: The Project [TR030008/APP/6.2]**.



## 2 Decommissioning Environmental Management

### 2.1 Decommissioning Activities

- 2.1.1 Decommissioning would be undertaken safely, in line with specific procedures and subject to risk assessment and permit to work schemes, and with regard to the prevailing environmental legislation in place at the time of decommissioning. The required licenses and permits would also be acquired.
- 2.1.2 The landside elements of the Project have a design life of up to approximately 25 years, although the operational life could be longer, depending on its integrity and market conditions at that time.
- 2.1.3 Underground landside infrastructure, such as pipelines, piles, foundations, culverts, and drainage, is expected to be left in situ and made safe as part of the decommissioning phase.
- 2.1.4 All above ground infrastructure associated with the Project is expected to be dismantled (e.g. hydrogen production units, storage tanks, loading bays, associated buildings, etc.). All materials removed would be reused or recycled where possible, or disposed of in accordance with relevant waste disposal regulations at the time of decommissioning. The site would be restored to a satisfactory state.
- 2.1.5 The specific method of decommissioning of the Project at the end of its operational life is uncertain at present, as the engineering approaches to decommissioning will evolve over the operational life of the Project.
- 2.1.6 An estimate of types and quantities of waste that would arise from decommissioning of the landside elements of the Project is provided in **Table 1** below.

**Table 1: Estimated Quantities of waste that would arise from the Decommissioning phase of the Project**

Waste Type	Quantity (m <sup>3</sup> )	Quantity (tonnes)
Concrete	119,292	286,300
Steel	5,235	41,879
Asphalt	13,247	30,469
Plastic	759	1,232
Total Waste Decommissioning	137,774	359,880

## 2.2 Decommissioning Programme

- 2.2.1 Separate Final DEMP(s) may be submitted and approved under Requirement of the **draft DCO [TR030008/APP/2.1]** relating to separate parts of the Project.
- 2.2.2 Details on the decommissioning programme and approach will be provided in the Final DEMP(s); this will include timescales and transportation methods.

## 2.3 Working Hours

- 2.3.1 The core working hours for the decommissioning of the Project are anticipated to be between 07:00 and 19:00 Monday to Saturday. Final core working hours for the decommissioning of the Project would be confirmed within the Final DEMP.
- 2.3.2 Occasional activity may be required outside of these times, due to activities requiring to be undertaken continuously. Where this is necessary, prior notification will be provided to the LPA.

## 2.4 Control of Noise

- 2.4.1 For all works that are undertaken outside of core work periods, a Section 61 consent under the Control of Pollution Act 1974 (Ref 1-5) will need to be obtained by the contractor. This would be agreed with NELC and contain details on the methodology, mitigation, communication strategy and monitoring. The need for any such works would be minimised where possible and would be carefully managed to reduce effects on local people.

## 2.5 Control of Light

- 2.5.1 Artificial lighting would be required in areas where natural lighting is unable to reach (sheltered/confined areas) during decommissioning, in order to maintain sufficient security and for health and safety purposes.
- 2.5.2 Mitigation principles and best practice measures would be implemented to avoid excessive glare and light spill to nearby receptors.
- 2.5.3 Lighting will be designed so as not to cause a nuisance outside of the Site in relation to views from residential receptors or light disturbance to ecological receptors.

## 2.6 Traffic Management and Parking Provision

- 2.6.1 Traffic and workers associated with the decommissioning of the Project are expected to travel to the Site via the A180 and A1173.
- 2.6.2 Prior to the start of the decommissioning phase of the Project, as part of the final DEMP(s), the contractor would prepare a Decommissioning Traffic Management Plan (“DTMP”), as well as a Decommissioning Worker Travel Plan (“DWTP”), in consultation with NELC.

2.6.3 The measures within the DTMP and DWTP would control the trips made by workers and encourage sustainable modes of travel, the purpose being to reduce the number of vehicles on the highway network. Both plans would also set out measures and controls to limit the number of trips on the highway network during peak hours.

2.6.4 Details on the location and size of parking provision within the Site, access/egress routes, loading/unloading areas for plant and materials, storage areas, wheel washing facilities, laydown areas and accommodation areas will be provided by the contractor in the DTMP.

## 2.7 Recycling and Disposal of Waste

2.7.1 In order to control the waste generated by decommissioning activities, the contractor will separate the main waste streams on Site, prior to them being taken to an approved, licensed waste facility for recycling or disposal. The contractor will minimise the creation of waste, maximise the reuse of recycled materials and assist the collection, separation, sorting, recycling and recovery of waste arising, as far as reasonably practicable.

2.7.2 The DEMP will include a detailed Site Waste Management Plan (“SWMP”), which will specify the waste streams to be estimated and monitored and goals set with regards to the waste produced.

2.7.3 All waste removal from the Site will be undertaken by fully licensed waste carriers and taken to licensed waste facilities for recycling or disposal.

## 2.8 Security

2.8.1 Site security during decommissioning will be managed by the appointed contractor. Site security fencing will remain in place throughout the duration of the decommissioning period. Any storage of materials will be kept secure to prevent theft or vandalism. A safe system for accessing the materials storage areas would be implemented by the appointed Contractor.

## 2.9 Responding to Environmental Incidents and Emergencies

2.9.1 An emergency response plan will be developed in consultation with the relevant local authority emergency planning officer, emergency services including the local fire service, as well as the Environment Agency in relation to responding to flood warnings and events.

2.9.2 The plan will detail the emergency response procedure and processes for any reporting.

## 3 Mitigation and Monitoring

### 3.1 Purpose

- 3.1.1 This section of the Outline DEMP sets out the mitigation measures to be included as a minimum in the Final DEMP(s). These measures are drawn directly from the technical chapters of the ES [TR030008/APP/6.2] or state best practice measures that would be followed. It also illustrates how the monitoring strategy will be set out and the responsible party identified for each mitigation measure or monitoring requirement.
- 3.1.2 The draft DCO does not make any provision for the decommissioning of the main elements of the Terminal above and below water level (save any topside infrastructure associated with landside infrastructure being decommissioned) or the jetty access road. This is because the jetty, jetty head, loading platforms and access ramps would, once constructed, become part of the fabric of the Port estate and would, in simple terms, continue to be maintained so that they could be used for port-related activities to meet a long-term need. Accordingly, mitigation measures for potential effects on marine ecology, ornithology, historic environment (marine), marine transport and navigation, physical processes and marine water and sediment quality during decommissioning are not included within this Outline DEMP.
- 3.1.3 Although plant and equipment on the jetty topside would be decommissioned, the decommissioning of this equipment is not expected to lead to significant effects, given that the Terminal would continue to be an active operational facility throughout and any impacts, such as disturbance, associated with decommissioning, are not expected to exacerbate the ongoing operational impacts. For this reason, the decommissioning of the topside infrastructure is scoped out of this document.
- 3.1.4 Notwithstanding this, best practice mitigation measures will be followed during the decommissioning phase for activities located in proximity to the marine environment.

**Table 2: Air Quality**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
<p>Increased nitrogen dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub>) emissions from on-site and off-site decommissioning vehicles/plant.</p> <p>Increased particulates and deposited dust from Site activities, transport, storage and handling of materials, including use of haul roads.</p>	<p>All activities will follow best industry practice, as would be defined in the Final DEMP(s) and comply with the requirements of the Supplementary Planning Guidance July 2014 for 'The Control of Dust and Emissions during Construction and Demolition' and the Institute of Air Quality Management's Guidance on the Assessment of Dust from Construction and Demolition or successor relevant document specified in the Final DEMP(s).</p>	<p>To be detailed in Final DEMP(s)(s)</p>	<p>Final DEMP(s) Contractor</p>

**Table 3: Noise and Vibration**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
<p>Construction noise and construction traffic noise at nearby Noise Sensitive Receptors (“NSR”) during the decommissioning phase.</p> <p>Construction noise and vibration impacts associated with activities on-site, during decommissioning.</p>	<p>Construction noise levels are likely to vary during decommissioning, depending on the location of work sites and proximity to NSRs. The nearest residential NSRs to the Site are currently (2023) on Queens Road (NSRs 1 and 2) and on the eastern edge of Immingham (NSRs 3 and 4). However, the residential uses along Queens Road are anticipated to cease ahead of commencement of the operation of the hydrogen production facility and therefore are not anticipated to be continuing during the decommissioning phase. A review of NSRs would be carried out at the time of decommissioning, as NSRs in the vicinity of the Site may have changed since the construction phase. Construction noise limits based upon current ambient noise levels are:</p> <p>NSR3 and NSR 4 – residential NSRs on the eastern edge of Immingham:</p> <ol style="list-style-type: none"> <li>65 dB LAeq,12hr during daytime.</li> <li>55 dB LAeq,12hr during evening and weekends.</li> <li>50 dB LAeq,8hr during the night-time.</li> </ol> <p>The following mitigation measures will be considered (to be confirmed in the Final DEMP(s)):</p> <ol style="list-style-type: none"> <li>Limits on noise emissions from plant and equipment at source.</li> <li>Enclosures and buildings for compressors and other equipment, silencers for vents and acoustic insulation on pipework to the extent technically and economically feasible.</li> </ol>	<p>To be detailed in the Final DEMP(s)</p>	<p>Final DEMP(s)Contractor</p>

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	<ul style="list-style-type: none"> <li>c. Planning plant operating modes to minimise start up, shut down and venting.</li> <li>d. Specific training for plant personnel and contractors.</li> </ul> <p>Where on-site construction works are to be conducted outside the core hours, extended hours would be agreed with NELC. Any such works would be minimised and be carefully managed to reduce effects on local people.</p> <p>Measures to mitigate noise and vibration would be implemented during the decommissioning phase in order to minimise impacts at local NSRs, particularly with respect to any activities required outside of core working hours. Mitigation to be included in the Final DEMP(s) will include, but not be limited to:</p> <ul style="list-style-type: none"> <li>a. Ensuring that processes are in place to minimise noise and vibration before works begin and ensuring that best practical means (“BPM”) are being achieved throughout the decommissioning programme, including the use of localised screening around the main noise producing plant and activities.</li> <li>b. All contractors will be familiar with current legislation and the guidance in BS 5228 (Parts 1 and 2) (Ref 1-2, Ref 1-3), which will be a prerequisite of their appointment.</li> <li>c. Ensuring that modern plant is used, complying with applicable UK noise emission requirements, and selection of inherently quiet plant where possible.</li> <li>d. All pneumatic percussive tools will be provided with effective silencers/acoustic covers.</li> </ul>		



Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	<ul style="list-style-type: none"> <li>e. Acoustic covers to engines will be kept closed when the engines are in use and idling.</li> <li>f. Hydraulic techniques for breaking to be used, where practical, in preference to percussive techniques where reasonably practicable.</li> <li>g. No start-up or shut down of vibratory rollers near to receptors.</li> <li>h. All plant and equipment being used for the works to be properly maintained, silenced where appropriate, operated to prevent excessive noise and vibration and switched off when not in use.</li> <li>i. Machines such as cranes that may be in intermittent use will be shut down between work periods or should be throttled down to a minimum. Machines will not be left running unnecessarily.</li> <li>j. Where reasonably practicable, the contractor will use quieter working methods, the most suitable plant and, reasonable hours of working for noisy operations.</li> <li>k. Where possible, the items of plant will be located the furthest distance from the nearby NSRs. Plant known to emit noise strongly in one direction will, when possible, be orientated so that the noise is directed away from NSRs.</li> <li>l. Loading and unloading of vehicles, dismantling of site equipment such as scaffolding or moving equipment or materials within the Site to be conducted in such a manner as to minimise noise and vibration generation, as far as reasonably practicable.</li> </ul>		

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	<ul style="list-style-type: none"> <li>m. No employees, subcontractors and persons employed on the site will cause unnecessary noise from their activities e.g. excessive 'revving' of vehicle engines, shouting and general behaviour etc. No radios or other audio equipment will be allowed on site.</li> <li>n. Electrically powered plant will be used over diesel power generators where possible and feasible.</li> <li>o. Audible warning systems (including reversing alarms) will be switched to the minimum setting required by the Health and Safety Executive.</li> <li>p. The use of any tannoy system on site will be used for emergency use only.</li> <li>q. All contractor communication devices will be used at a minimum audible level.</li> <li>r. Appropriate routing of construction traffic on public roads and along access tracks, to reduce construction traffic noise, as far as reasonably practicable.</li> <li>s. Provision of information to NELC and local residents to advise of potential noisy works that are due to take place.</li> <li>t. Monitoring of noise and vibration complaints and reporting to the contractor for immediate investigation.</li> </ul> <p>Method statements regarding decommissioning management, traffic management, and overall site management will be prepared in accordance with best practice and relevant British Standards, to help to reduce impacts of works. One of the key aims of such method statements will be to minimise noise and</p>		

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	<p>vibration disruption to local residents during the decommissioning phase as far as reasonably practicable.</p> <p>Regular communication with the local community throughout the decommissioning period will also serve to publicise the works schedule, giving notification to residents regarding periods when higher levels of noise and vibration may occur during specific operations, and providing lines of communication where complaints can be addressed.</p> <p>The selected contractor would be a member of the 'Considerate Constructors Scheme', which is an initiative open to all contractors undertaking building work.</p> <p>Final DEMP(s)The need for monitoring of noise and vibration levels during decommissioning will be determined through the detailed assessment undertaken for the Final DEMP and recorded in the Final DEMP(s).</p>		

**Table 4: Nature Conservation (Terrestrial Ecology)**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
Loss of existing habitats/ disturbance to species within Site	Standard management measures will be implemented for prevention of surface and ground water pollution, fugitive dust management and noise prevention or amelioration. Precautionary working method statements would be produced, controlled and implemented as part of the final DEMP.  Pre-decommissioning ecological surveys will be required to confirm species absence/presence.	To be detailed in Final DEMP(s)	Final DEMP(s)Contractor
Water Vole <ul style="list-style-type: none"> <li>Habitat damage/loss</li> <li>Noise and visual disturbance</li> </ul>	Displacement of water voles (if confirmed present following updated survey work prior to decommissioning) from affected habitats under Natural England Class License (where necessary based on licensing requirements at the time of decommissioning).  Buffer zone from edges of watercourses would be implemented if water voles are confirmed as present following updated survey work prior to decommissioning. A sensitive temporary lighting design to	To be detailed in Final DEMP(s)	Final DEMP(s)Contractor

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Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	minimise spill would be detailed in the Final DEMP(s).		
Otter (foraging): <ul style="list-style-type: none"> <li>Noise and visual disturbance.</li> <li>Changes to hydrology of ditches.</li> </ul>	A buffer zone from the edges of watercourses would be implemented during decommissioning. A sensitive temporary lighting designed to minimise spill would be detailed in the Final DEMP(s).	To be detailed in Final DEMP(s)	Final DEMP(s) Contractor

**Table 5: Traffic and Transport**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
<p>Increased traffic flows on local highway network.</p> <p>Severance, decrease in pedestrian amenity and fear and intimidation.</p> <p>Decrease in road safety and the inclusion of hazardous loads on the local highway network.</p>	<p>A DTMP will be prepared as part of the DEMP to manage traffic associated with decommissioning and will include measures to minimise the impact of works traffic on surrounding roads, including disruption and risk of traffic accidents along local access roads and along Public Rights of Way (“PRoW”). A DWTP will also be prepared as part of the DEMP in consultation with NELC.</p> <p>Measures will include:</p> <ol style="list-style-type: none"> <li>Restricting movement of Heavy Goods Vehicles (“HGVs”) to certain routes and times of day.</li> <li>A monitoring system and Delivery Management System to record the route of HGVs to and from the Site and regulate their arrival times to ensure compliance.</li> <li>Encouraging alternative travel arrangements for site personnel, including car sharing and shuttle bus services, to reduce the volume of vehicle trips required.</li> </ol>	<p>To be detailed in the Final DEMP(s)</p>	<p>Final DEMP(s) Contractor</p>

**Table 6: Landscape and Visual Impact**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
<p>Increased visibility of construction activities and vehicles.</p> <p>Protect trees and conserve landscape features.</p> <p>Introduction of construction lighting.</p>	<p>Valued trees, woodland, existing vegetation and other landscape features would be protected from decommissioning works and retained wherever possible, in accordance with BS5837:2012 Trees in relation to design, demolition and construction. (Ref 1-4).</p> <p>An additional Arboricultural Impact Assessment would be required prior to decommissioning to identify which trees or vegetation are to be kept and protected during decommissioning and which may be removed. Trees would be clearly fenced or marked so that site operatives are in no doubt as to which ones are to be kept and protected.</p> <p>Construction temporary lighting will be arranged so that glare would be minimised outside the Site. Measures to minimise the impact of lighting during decommissioning would be detailed in the Final DEMP(s).</p>	<p>To be confirmed in the Final DEMP(s)</p>	<p>Final DEMP(s) Contractor</p>



**Table 7: Historic Environment (Terrestrial)**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
Impacts on buried archaeological resources	<p>Decommissioning of the Project is unlikely to result in additional temporary or permanent impacts on any terrestrial heritage asset, as decommissioning of the landside elements would likely involve only leaving underground pipelines and other underground elements of the Project in situ. All above ground infrastructure associated with the Project is anticipated to be dismantled and all material removed. Therefore, no archaeological mitigation is proposed as part of the decommissioning works.</p> <p>A Written Scheme of Investigation (“WSI”) has been prepared (see <b>Appendix 14.E [TR030008/APP/6.4]</b>) and details a comprehensive archaeological evaluation of the Site. No further mitigation is required.</p>	N/A	N/A

**Table 8: Water Use, Water Quality, Coastal Protection, Flood Risk and Drainage**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
Risk of flooding and pollution to waterbodies	<p>A water management plan will be developed as part of the Final DEMP(s), and will detail management measures including any water quality monitoring to be undertaken.</p> <p>If decommissioning site runoff is treated on site, a Water Discharge Activity Permit (to be separately consented) would be acquired as necessary.</p> <p>Where the Control of Major Accident Hazards (“COMAH”) regulations still apply, (unless the site were de-notified) under COMAH, a site Emergency Response Plan (prepared pursuant to Regulation 9 of the COMAH Regulations) would be in place for dealing with emergency situations involving loss of containment of hazardous substances. This would detail how to contain and control incidents to minimise the effects and limit danger to persons, the environment and property. The Emergency Response Plan would set out the emergency spill control procedure that will include the actions adapted from the Health and Safety Executive’s Emergency Response/Spill Control Technical Measures Document.</p> <p>Further guidance which would be referenced in the development of the site Emergency Response Plan would include:</p> <p>a. HS(G)191 Emergency planning for major accidents. Control of Major Accident Hazards</p>	To be detailed in Final DEMP(s)	Final DEMP(s) Contractor

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	<p>Regulations 1999 (Health and Safety Executive, 1999).</p> <p>b. HS(G)71 Chemical warehousing: the storage of packaged dangerous substances (Health and Safety Executive, 1992).</p> <p>c. BS 5908: Fire and explosion precautions at premises handling flammable gases, liquids and dusts. Code of practice for precautions against fire and explosion in chemical plants, chemical storage and similar premises (British Standards Institute, 1990).</p>		

**Table 9: Climate Change**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
Greenhouse gas emissions from activities and vehicles during decommissioning	Standards of good practice for climate change will be followed to minimise greenhouse gas emissions from activities and vehicles associated with decommissioning of the Project.	To be detailed in the Final DEMP(s)	Final DEMP(s) Contractor
Risks related to severe weather events	<p>A risk assessment of severe weather impacts on the decommissioning process would be produced by the contractor to inform the need for decommissioning mitigation measures to be secured in the Final DEMP(s). Any receptors and/or decommissioning-related operations and activities potentially sensitive to severe weather events will be considered in that assessment. Climate change projections will be considered in the risk assessment.</p> <p>The contractors' Environmental Management System ("EMS") will consider all measures deemed necessary and appropriate to manage severe weather events and should as a minimum cover training of personnel and prevention and monitoring arrangements.</p>	To be detailed in the Final DEMP(s)	Final DEMP(s) Contractor

**Table 10 Material Assets and Waste**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
Potential to impact on sensitive receptors (humans, wildlife and controlled waters) if decommissioning waste is not stored and managed appropriately.	A Site Waste Management Plan (will be developed as part of the Final DEMP(s)). This will outline measures for managing waste produced during decommissioning works, including methods proposed for reducing and recycling waste wherever possible.	To be confirmed in Final DEMP(s)	Final DEMP(s) Contactor
Minimise waste production during decommissioning	Suitable measures for the sustainable use of resources and waste management will be implemented during decommissioning. The contractor will seek to use material resources efficiently, reduce waste at source, reduce waste that requires final disposal to landfill and apply the principles of the waste hierarchy.	To be confirmed in Final DEMP(s)	Final DEMP(s) Contractor

**Table 11: Ground Conditions and Land Quality**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
<p>Direct contact with contamination and inhalation of dust / soil derived vapours.</p> <p>Potential for contaminants to enter watercourses during the decommissioning works.</p>	<p>The construction workers at the Site during the decommissioning phase will follow general best practice guidance and adhere to site specific health and safety risk assessments, legislation and regulations. This would be set out within the final DEMP.</p> <p>Pollution control measures will be implemented, including:</p> <ol style="list-style-type: none"> <li>a. All plant and machinery will be checked regularly and, where possible, the use of drip trays will be employed, should vehicles be parked on unsurfaced areas of the site.</li> <li>b. An emergency spillage action plan will be produced and provisions made to contain any leak/spill.</li> <li>c. Should any potentially contaminated ground, including isolated 'hotspots' of contamination be encountered during decommissioning, the contractor will be required to investigate the areas and assess the need for containment or disposal of the material. The contractor will also be required to assess whether any additional health and safety measures are required. Any such investigations will be required to be undertaken in consultation with the Environment Agency and other appropriate consultees. To further minimise the risks of contaminants being mobilised and contaminating other soils or water,</li> </ol>	<p>Dust monitoring should be undertaken</p>	<p>Final DEMP(s) Contractor</p>

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	<p>decommissioning workers will be briefed as to the possibility of the presence of such materials.</p> <p>d. In the event that contamination is identified during decommissioning works, appropriate remediation measures will be taken to protect workers, future site users, water resources, structures and services.</p> <p>e. The contractor will be required to place arisings and temporary stockpiles away from watercourses and drainage systems, whilst surface water will be directed away from stockpiles to prevent erosion.</p> <p>f. To minimise the mobilisation of potential contaminants from material stockpiles, stockpiled material will be stored at a suitable distance from watercourses and suitably covered. If such material stockpiles are not used within three months, temporary covers or reseeded measures, for soils, will be implemented. Erosion protection matting may also be used. Collectively, these measures will minimise the potential for sediment mobilisation via wind and water flows.</p> <p>g. Any waters removed from excavations by dewatering will be discharged appropriately, subject to the relevant licences being obtained.</p> <p>h. The contractor will implement a dust suppression/management system in order to control the potential risk from airborne contamination migrating off-site to adjacent sites.</p>		



**Table 12: Major Accidents and Disasters**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
<p>Minimising the risk of major accidents and disasters</p> <p>An incident occurring during decommissioning such as dismantling pipework where vessels have not been fully de-inventoried or isolated (still contain flammable material).</p> <p>Potential for fire and/or explosion.</p> <p>Failure to isolate services such as electrical cabling during these activities could also result in harm to human health, such as electrocution.</p>	<p>The risk of major accidents and disasters during decommissioning will be addressed through relevant risk assessments and management plans prior to undertaking the works, as part of the final DEMP.</p> <p>Formal process safety studies and risk assessments would be carried out to identify potential hazards prior to decommissioning and demolition of the hydrogen production facility). These studies are typically prepared by a team of specialists to identify potential hazards, consider the associated risks and specify the appropriate mitigation and control measures required and would be prepared as part of the final DEMP.</p> <p>A number of factors must be considered to safely carry out the decontamination, decommissioning and disposal of process equipment and pipework which has contained the dangerous substances. These include ensuring systems are 'gas-free' via the removal of the inventory, venting systems to atmosphere and ensuring they are sufficiently clean so no remaining gas can be detected.</p> <p>Comprehensive plans for decommissioning safety and environmental management would be developed prior to work commencing, to risk assess tasks and produce method statements for the work. This would be required as part of the Environmental permit.</p>	<p>To be detailed in the Final DEMP(s)</p>	<p>Final DEMP(s) Contractor</p>

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Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
	<p>All decommissioning work to be controlled via permit to work systems, which consist of site-specific control measures detailed in safe systems of work under the Health and Safety at Work etc. Act 1974 (“HSWA”) (Ref 1-6).</p> <p>Isolation procedures such as ‘Lock-out/Tag-Out’ are standard industrial practice for the isolation of electrical systems on process and manufacturing sites.</p>		

**Table 13: Human Health and Wellbeing**

Potential Impact	Mitigation Measure	Monitoring Requirement	Responsibility
Impacts to human health and wellbeing during decommissioning	Mitigation measures outlined in <b>Table 2, Table 3, Table 5, Table 9 and Table 12</b> of this Outline DEMP will be implemented to reduce the impacts and effects on human health and wellbeing during decommissioning.	N/A	N/A

## 4 Complementary Plans and Procedures

- 4.1.1 Secondary/complementary environmental plans and procedures for the decommissioning phase will be developed alongside the Final DEMP(s) and would be submitted to the regulator as part of the Environmental permit surrender process.

## 5 Implementation and Operation

- 5.1.1 The Final DEMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the measures described in this Outline DEMP, including:
- a. An organogram illustrating team roles, names and responsibilities.
  - b. Training requirements for relevant personnel on environmental topics.
  - c. Information on site briefings and toolbox talks that will be used to equip relevant staff with the necessary level of knowledge to follow environmental control procedures.
  - d. Measures to advise employees of changing circumstances as work progresses.
  - e. Communication measures.
  - f. Document control.
  - g. Monitoring, inspections and audits of site operations.
  - h. Environmental emergency procedures.

## 6 Checking and Corrective Action

### 6.1 Monitoring and Reporting

- 6.1.1 To meet the mitigation requirements outlined within the Final DEMP(s), environmental monitoring will be undertaken throughout the decommissioning phase. Detailed monitoring requirements will be set out in the Final DEMP(s).
- 6.1.2 As part of the monitoring process, the contractor would allocate a designated Environmental Site Officer, who will be present on Site throughout the decommissioning process. The Environmental Site Officer will observe site activities and report any deviations from the Final DEMP(s), along with the subsequent action taken and general conditions at the time. The Applicant would be informed of any deviations from the Final DEMP(s) as soon as possible following the identification of any issues. The Environmental Site Officer would also act as day-to-day contact with the relevant stakeholders and regulatory agencies, such as the Environment Agency.
- 6.1.3 The Environmental Site Officer will arrange regular formal inspections to ensure the requirements of the Final DEMP(s) are being adhered to. After completion of the decommissioning, the Environmental Site Officer will conduct a final review.

### 6.2 Records

- 6.2.1 The Environmental Manager/Project Manager would retain records of environmental monitoring and implementation of the Final DEMP(s). This would allow retention of evidence that the Final DEMP(s) is being implemented effectively. These records would include:
- Environmental Action Schedule.
  - Licenses and Approvals.
  - Results of inspections by the Environmental Manager.
  - Other environmental surveys and investigations.
  - Environmental equipment test records.
- 6.2.2 The Final DEMP(s) would be updated as necessary, with a full review as and when required (at least quarterly) throughout the decommissioning period.
- 6.2.3 A brief report would be produced and submitted to NELC on a quarterly basis and following completion of decommissioning. This will summarise the monitoring process, observed deviations from the Final DEMP(s), and the corrective actions taken.

### 6.3 Management Review

- 6.3.1 A final report would be submitted to an appropriately qualified individual at NELC upon completion of the decommissioning works, in order that they can confirm that decommissioning is complete.

## 7 References

- Ref 1-1 The Stationery Office Limited (2017). The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
- Ref 1-2 British Standards Institute (BSI). (2014). BS 5228:2009+A1:2014: Code of practice for noise and vibration control on construction and open site– Part 1: Noise’.
- Ref 1-3 British Standards Institute (BSI). (2014). BS 5228:2009+A1:2014: Code of practice for noise and vibration control on construction and open site – Part 2: Vibration’.
- Ref 1-4 The British Standard "Trees in Relation to Design, Demolition and Construction to Construction - Recommendations" (BS 5837) (2012)
- Ref 1-5 The Stationery Office Limited (1974). Control of Pollution Act.
- Ref 1-6 HMSO (1974). Health and Safety at Work etc. Act.