

The Lighthouse Green Fuels Order

Application Reference: EN0110025

Applicant: LGF Projects Limited

Environmental Statement Volume I Chapter 5: Construction Programme and Management

Document Reference: 6.1.5

Revision: 00

APFP Reg. 5(2)(a) and EIA Reg. 14

Document information

Document Title	ES Chapter 5: Construction Programme and Management
Document Ref	6.1.5
Author	Arup

Revision record

00	Purpose	DCO Application Submission
	Date	September 2026

Information Classification

Information Classification	Date	Reason
Public	September 2026	Proprietary information which will have no impact on the company if disclosed publicly

Contents

Abbreviations	1
5. Construction Programme and Management	1
5.1 Introduction.....	1
5.2 Construction Programme.....	1
5.3 Construction Management	5
Construction Equipment	5
Preliminary Works	6
Site Clearance and Remediation	6
Earthworks	7
Temporary Construction Compounds and Welfare Facilities	8
Quay Construction	10
Jetty Demolition	10
Quay Wall Construction	11
Use of the Quay Wall as a Marine Off-loading Facility (MOF) During Construction	12
Capital Dredging	12
Main Civil and Process Works	14
General	14
Linkline Corridor Crossing	15
Construction of Utility Connections	17
Electrical Connections	17
Natural Gas Connection	17
Water Connections	17
Raw and Potable Water	17
Surface Water Drainage	18
Treated Industrial Wastewater	18
Other Pipeline Connections (Industrial Gases, Products and CO ₂)	18
Construction method for installing above ground pipelines in existing utility corridors	18
Construction method for installing below ground pipelines	20
Crossing of existing assets	21
Construction traffic and site access	21
Construction staff	22
Construction working hours	23
Storage of construction plant and materials	23
Construction utilities	24
Lighting	24
Public Rights of Way	24
Wheel wash facilities	25
Construction materials and waste	26
Construction Environmental Management Plan and Site Waste Management Plan	26

Commissioning 27

5.4 Summary 27

References 28

Tables

Table 5.1 Outline construction programme 3

Insets

Inset 5.1 Indicative cross section of the Linkline corridor crossing 16

Abbreviations

Abbreviation	In full
AGI	Above Ground Installation
AIL	Abnormal Indivisible Load
ASU	Air Separation Unit
BAT	Best Available Techniques
CD	Chart Datum
CEMP	Construction Environmental Management Plan
CFA	Continuous Flight Auger
CHP	Combined Heat and Power
CO ₂	Carbon dioxide
COSHH	Control of Substances Hazardous to Health
CTMP	Construction Traffic Management Plan
CWTP	Construction Worker Travel Plan
DCO	Development Consent Order
DML	Deemed Marine Licence
DNO	Distribution Network Operator
EA	Environment Agency
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
ES	Environmental Statement
fCEMP	Framework Construction Environmental Management Plan
fSWMP	Framework Site Waste Management Plan
FID	Final Investment Decision
GI	Ground Investigation
GPR	Ground Penetrating Radar
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
LGF	Lighthouse Green Fuels
LBMP	Landscape and Biodiversity Management Plan
MEWP	Mobile Elevated Working Platform
MMO	Marine Management Organisation
MOF	Marine Off-loading Facility
MSDS	Material Safety Data Sheet
NEP	Northern Endurance Partnership
NTS	National Transmission System

NWL	Northumbrian Water Limited
OD	Ordnance Datum
O ₂	Oxygen
N ₂	Nitrogen
PA 2008	Planning Act 2008
PINS	Planning Inspectorate
PRoW	Public Right of Way
RCBC	Redcar and Cleveland Borough Council
RoRo	Roll-on/Roll-off
SAF	Sustainable Aviation Fuel
SPMT	Self-Propelled Modular Transporter
STBC	Stockton-on-Tees Borough Council
UXO	Unexploded Ordnance
WwTW	Wastewater Treatment Works

5. Construction Programme

5.1 Introduction

- 5.1.1 This chapter of the Environmental Statement (ES) describes the construction phase of the Proposed Development (including commissioning). The Proposed Development is described in **Chapter 4: Proposed Development (ES Volume I, Application Document Ref. 6.1)**.
- 5.1.2 This chapter includes information on the expected construction programme and timings and methods of working, based on the current understanding at this stage in the design of the Proposed Development. The detailed construction programme will be determined by the Engineering, Procurement and Construction (EPC) contractor(s) who has not yet been appointed. Where construction details cannot be confirmed at this stage, the likely worst case scenario has been assumed, using professional judgement from experience on similar developments.

5.2 Construction Programme

- 5.2.1 The Proposed Development construction programme is anticipated to commence shortly after the Development Consent Order (DCO) decision (currently projected to be Q1 2028) and after the Final Investment Decision (FID). The construction phase is therefore likely to be approximately three to four years in duration lasting from 2028 to 2031.
- 5.2.2 The key stages of the construction programme are currently expected to be:
- 2028 - 2029 – Preliminary Works, site establishment, site preparation, commencement and completion of quay construction, and commencement of civil engineering works (referred to as ‘civils works’);
 - 2029 - 2030 – Continued civil engineering works, construction of the Sustainable Aviation Fuel (SAF) production facility, Combined Heat and Power (CHP) plant and infrastructure including utilities, pipelines and other connections in the Main Site, together with construction of other pipeline and utility connections in the Wider Site. Module deliveries, mechanical installation and electrical and instrumentation installation works would also take place during this period; and
 - 2030-2031 – Completion of civils works, pipeline, mechanical installation and electrical and instrumentation installation works, followed by commissioning of the Proposed Development and commencement of operations in late 2031.

- 5.2.3 This ES assesses the environmental effects of undertaking the preliminary works required, as these also form part of the Proposed Development, as well as the construction and commissioning of the SAF Production Facility.
- 5.2.4 An outline construction programme is shown in [Table 5.1](#).

Table 5.1 Outline construction programme

	2028				2029				2030				2031			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Quay Construction																
Preliminary Works and Site Preparation																
Civils (construction of the SAF production facility, CHP plant and related infrastructure)																
Module Deliveries																
Mechanical Installation																
Electrical and Instrumentation Installation																
Pipelines and Utilities																
Commissioning																
Operation																

- 5.2.5 The construction of the Proposed Development will be undertaken by the EPC Contractor(s) as follows:
- *Main Site:* (Work Nos. 1, 2, 3, 4, 5, 6, 7B, 8, 9A, 9B, 12 and 13) construction of all elements of the Proposed Development within the Main Site including SAF Plant, CHP Plant, quay, on-site connections, optional air separation unit (ASU), and, potentially, construct that part of carbon dioxide (CO₂) export connection to the Northern Endurance Partnership (NEP) CO₂ Gathering Network within the Main Site; and.
 - *Wider Site* (Work Nos. 5, 7A, 9A, 9B, 10, 11, 13A, 13B and 14) temporary construction laydown compound north of Seal Sands Road, and in South Tees, construction of replacement industrial wastewater pipeline, off-site electrical connection, off-site O₂ and N₂ connections, telecommunications connections, dredging of berthing pocket and access channel for the quay and, potentially, in future, off-site carbon dioxide (CO₂) export connection to the Northern Endurance Partnership (NEP) CO₂ Gathering Network delivery point.
- 5.2.6 The Main Site has been cleared above ground but contains foundations, piles and redundant underground services associated with its former industrial use. The removal of those structures if necessary, any remediation required, and cut and fill works for formation of the development platform will be required before piling works and the construction of the main structures of the Proposed Development. The former landfill to the west of the Main Site will also be cleared of vegetation.
- 5.2.7 The detailed construction programme (including the sequencing of construction works) is the responsibility of the appointed EPC contractor(s) and will vary dependent on the final plant design and layout and procurement of key equipment.
- 5.2.8 To optimise the construction schedule and minimise disruption, modular construction will be utilised where practicable, with modules constructed off-site. This will allow modular plant and equipment to be delivered to the Site by ship and offloaded via the new quay to the east of the Main Site. This will reduce Abnormal Indivisible Loads (AILs) and Heavy Goods Vehicle (HGV) traffic on the road network during construction, and will optimise the duration of the site construction programme and reduce the onsite workforce. Areas of the Main Site as well as third-party land off the Main Site will be used for temporary construction compounds (see **Figure 5.1: Construction Layout, ES Volume II, Application Document Ref. 6.2**).
- 5.2.9 The western portion of the Main Site is occupied by a historic landfill site. It is proposed that part of this area will be used as a laydown area during construction and then as the location of the flare and other SAF plant

structures during operation. Remedial and foundation works are therefore likely to be necessary in this area prior to construction. The historic landfill site is the subject of on-going geo-environmental investigations and risk assessments which will identify any necessary remedial actions and appropriate foundation solutions to allow development.

- 5.2.10 Schedule 2 (Requirements) to the **draft DCO (Application Document Ref. 3.1)** provides that no part of the authorised development may commence until a Construction Environmental Management Plan (CEMP) for that part has been submitted to and approved by the relevant planning authority, which is in accordance with the, **Framework CEMP (fCEMP) (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**. The fCEMP sets out the key measures to be employed during construction to control and minimise the construction impacts on the environment.

5.3 Construction Management

Construction Equipment

- 5.3.1 In line with the PINS NSIP: Pre-Application Advice on EIA [Ref 1] and the methodology presented in **Chapter 2: Assessment Methodology (ES Volume I, Application Document Ref. 6.1)**, the ES has assessed the likely worst case (for noise, for example) for the types and numbers of plant and machinery likely to be used on the Proposed Development during the construction period, as well as the use of both continuous flight auger (CFA) and driven piles.
- 5.3.2 Construction plant for the quay is likely to include (but is not limited to):
- barges (either jack-up or spud leg) with crawler crane;
 - flat deck barges;
 - multi-purpose vessels/tugs;
 - general work boat;
 - self-propelled hopper barge; and
 - backhoe excavator.
- 5.3.3 Construction plant for both the Main Site and Wider Site is likely to include (but is not limited to):
- piling equipment (Main Site only);
 - mobile plant and civils equipment;
 - heavy lifting equipment (including cranes);
 - concrete batching plant; mobile power generating equipment; and

- trenchless crossing equipment (for example Horizontal Directional Drilling (HDD)).

5.3.4 There may be a requirement for point of use temporary generators for site power during construction. Details of the number of generators, sizing and modes of operation are not yet available. These will be defined by the EPC Contractor(s), as appropriate. Depending on aggregated plant capacities, an Environmental Permit or medium combustion plant permit will be applied for as required from the Environment Agency, which will regulate emissions from the generators. In addition, site power for construction could be provided via an on-site electrical connection. The EIA assumes use of temporary generators for site power as a likely worst case in terms of noise and emissions to air.

Preliminary Works

- 5.3.5 Preliminary works are defined as works within the Main Site and Work No. 13 consisting of site clearance, including vegetation clearance, and demolition of existing structures, environmental surveys, geotechnical surveys, surveys of existing infrastructure, and other investigations for the purpose of assessing ground conditions, the preparation of facilities for the use of contractors (excluding earthworks and excavations), the provision of temporary means of enclosure and site security for construction, the provision of temporary means of access, the diversion and laying of utilities and services, the temporary display of site notices or advertisements and any other works agreed by the relevant planning authority, provided that these will not give rise to any materially new or materially different environmental effects from those assessed in the environmental statement.
- 5.3.6 Prior to these preliminary works being undertaken, ground investigation works are being undertaken for both geo-environmental and geotechnical purposes across the Site.

Site Clearance and Remediation

- 5.3.7 Site remediation works at the Main Site will be completed by a competent contractor(s) prior to the start of construction of the Proposed Development. The scope of works anticipated to be undertaken by the contractor includes:
- construction of temporary compounds areas on the Main Site;
 - where necessary, removal of derelict underground structures and obstructions and removal and treatment of historic environmental contamination as required; and
 - placement of suitable material (either reused materials or imported fill) to form the appropriate platform levels for development on the Main Site (a minimum level of 5.08mAOD).

- 5.3.8 Further remedial measures may be required depending on the requirements of the detailed design and the outcome of further GI. This is due, in part, to the presence of derelict structures associated with the former industrial use of the Main Site. Targeted remediation may be required by the Applicant (**Chapter 21: Geology Soils, ES Volume I, Application Document Ref. 6.1**). Where required, these works would be managed and controlled through the Construction Environmental Management Plan(s) (CEMP(s)) which will be prepared in accordance with the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**. These potential additional remediation works are considered and assessed within the relevant chapters of this ES as a likely worst-case scenario.

Earthworks

- 5.3.9 Any spoil material (e.g. manmade fill or excavated natural ground) generated during construction will be stored temporarily within the Site. Spoil which cannot be re-used will be removed from the Site. Re-use of spoil will be based on obtaining the necessary consents and permits. If necessary, suitable measures will be put in place to prevent sediment being washed outside of the Site, and the stockpiles will be monitored/ checked for wash away during periods of high rainfall or flooding, although the Main Site is located in an area of low flood risk (Flood Zone 1). It will be necessary to import fill materials (including soil and backfill materials) to achieve final site levels. Fill materials will primarily be imported by HGV with the option for some fill to be imported by ship using either the existing infrastructure or the new quay depending upon timing. Further details of the measures that would be implemented are included in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**.
- 5.3.10 Any soils moved will be managed in accordance with the Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites [Ref 2] to minimise impacts on soil structure and quality, and appropriate measures will be implemented to minimise short-term and long-term impacts on land drainage. These measures are included in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** together with measures for the management of contaminated soils.
- 5.3.11 As a likely worst-case it has been assumed that a proportion of the material excavated could be classified as hazardous material due to the historic industrial land uses of the Main Site and require off-site disposal at a permitted waste management facility. Excavated material will be sampled and screened against site-specific assessment criteria. Any suspected contaminated material would be segregated and placed on an impermeable membrane to prevent leaching of contaminants. These measures are set

out in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**. Further to Schedule 2 (Requirements) to the **draft DCO (Application Document Ref. 3.1)**, the delivery of subsequent detailed CEMP(s) are also secured.

- 5.3.12 Additionally, the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** includes measures to prevent an increase in the risk of pollution during a flood event during the construction works. For example, construction materials will be stored on the Main Site (landside of the quay wall) which is outside of the 1 in 100-year floodplain extent and only moved to the working area immediately prior to use.

Temporary Construction Compounds and Welfare Facilities

- 5.3.13 Proposed construction laydown areas, including storage, site offices, welfare facilities and car parking, which form part of the associated development authorised under Schedule 1 of the **draft DCO (Application Document Ref. 3.1)** will be located at various places within the Site. There will be construction laydown areas on currently vacant land to the north of the Main Site. Locations for satellite compounds may also be required where utility connections are being constructed outside of the Main Site.
- 5.3.14 Clearance, levelling and ground preparation works for these laydown areas may be required to provide a suitable surface material. Where appropriate, the surface material will be permeable to allow uncontaminated rainwater to percolate into the ground. Suitably bunded locations will be identified as temporary storage areas for any hazardous or polluting materials or chemicals to reduce the risk of pollution during construction.
- 5.3.15 The location of temporary construction compounds has been selected based on the following requirements:
- to support the type, scale and complexity of the works;
 - to facilitate material deliveries and storage in key locations;
 - to be in suitable proximity to work sites and existing transport infrastructure, such as the road network and river access, to optimise vehicle movements and minimise impacts on the environment and local community;
 - to provide the necessary facilities and operations capability to the construction workforce;
 - to be close to the existing transport networks to enable the workforce to commute to their place of work; and

- taking account of feedback from stakeholders and landowners, refer to the Consultation Report and associated appendices (Application Document Ref. 5.1).
- 5.3.16 Based on the above criteria, a number of temporary construction compounds are currently identified as being required for construction of the Proposed Development, as shown on **Figure 5.1: Construction Layout (ES Volume II, Application Document Ref. 6.2)**.
- 5.3.17 The temporary construction compounds will be required for varying amounts of time in support of construction, depending upon their specific use and location (as shown in [Table 5.1](#)). Some temporary construction compounds will be necessary throughout the entire construction phase, including the Main Site compounds. The use of temporary construction compounds has been assessed using likely worst case assumptions regarding the nature of activities to be undertaken.
- 5.3.18 The precise siting and layout of construction laydown and temporary compounds on the Wider Site cannot be anticipated at this stage of project development, so the ES has been prepared using the likely worst case for the general location and number of construction laydown and temporary compounds, such that the final number and positioning will not cause any new or additional environmental effects compared to the ES.
- 5.3.19 Offices, welfare facilities and workshops on laydown areas will be constructed from a mix of single and modular units or be located in buildings.
- 5.3.20 On-site parking will also be included in close proximity to the Main Site. Further details of parking provision will be incorporated into detailed Construction Traffic Management Plan(s) (CTMPs), which is secured under Schedule 2 (Requirements) to the **draft DCO (Application Document Ref. 3.1)** and assumptions about movements associated with parking are explained in **Chapter 18: Traffic and Transport (ES Volume I, Application Document Ref. 6.1)** and the **Framework CTMP (Appendix 18F, ES Volume III, Application Document Ref. 6.3)**.
- 5.3.21 There will also be designated contractor parking for vehicles and cycles provided at each temporary construction compound. If necessary, water will be supplied by tanker where appropriate/ required. Sanitary facilities will be provided at each temporary construction compound, and waste stored for off-site disposal.
- 5.3.22 Site clearance, levelling and ground preparation works for temporary construction compounds may be required to provide a suitable working area. Where appropriate, the surface material of laydown areas will be

permeable to allow rainwater to percolate into the ground. Suitably bunded and lined locations will be identified as storage areas for any hazardous or polluting materials and chemicals, to control the risk of pollution. Further detail can be found in **Chapter 9: Surface Water, Flood Risk and Water Resources (ES Volume I, Application Document Ref. 6.1)**.

- 5.3.23 Rainfall runoff from areas where there is a risk of contamination will be managed using temporary drainage systems treatment (including settlement of suspended solids and or oil interceptors) and/ or tankered offsite. Clean runoff will then be discharged to local watercourses with the approval of the Environment Agency pursuant to a discharge licence. The drainage systems will incorporate pollution control systems designed in line with the Control of Water Pollution from Construction Sites – Guidance for consultants and contractors C532 [Ref 3] or as agreed with the relevant authorities. Surface watercourses and waterbodies near worksites will be regularly inspected for signs of siltation or other forms of pollution in line with CIRIA Environmental Good Practice on Site Guide C741 [Ref 4], whilst pumped groundwater, process effluents and construction site runoff will be tested to ensure compliance with discharge consent requirements – these measures are detailed in the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** and will be set out in detailed CEMP(s) .
- 5.3.24 Rainfall runoff from areas of low contamination risk may be captured and stored in settlement ponds for reuse where reasonably practicable to reduce consumptive water use (e.g. to supply wheel wash facilities or for dust suppression). Habitats that will be temporarily lost or damaged during construction will be assessed and, where required, mitigated in line with the **Framework Landscape and Biodiversity Management Plan (LBMP) (Application Document Ref. 5.8)**. Associated requirements for the protection of retained vegetation (e.g. during vehicle movements and construction/re-instatement works), vegetation restoration soil protection and handling, and temporary soil storage are specified in the **fCEMP (Appendix 5A in ES Volume III, Application Document Ref. 6.3)** and will be detailed further in detailed CEMP(s). These specifications reflect current industry good practice and will be location specific.

Quay Construction

Jetty Demolition

- 5.3.25 Prior to constructing the quay wall, the existing Jetties No 1 and 2 and other ancillary structures along the embankment would be demolished. Piles would be extracted if required given their location, but if it is not possible to extract the piles, they would be cut down below the level where the stumps could cause a risk of grounding or damage to vessels.

- 5.3.26 This activity is expected to rely on a combination of marine plant and landside plant. Marine plant is expected to include a spud leg barge or jack up barge with a crawler crane, supported by flat deck barges and tugs to supply equipment and remove demolished materials.
- 5.3.27 The existing gabion baskets on the face of the embankment would be removed by crane and the embankment slope regraded using land-based plant such as long-reach excavators for the upper slope and marine plant for the lower slope.
- 5.3.28 Ideally, concrete arising from jetty demolition would be crushed for reuse on-site, however, as it is expected to have a high chloride content, this may not be practicable. Reinforcement bars would be sent to a recycling facility. Other materials which cannot be recycled would be taken to a licensed landfill site. See **Chapter 16: Materials and Waste (ES Volume I, Application Document Ref. 6.1)** and **Appendix 5B: Site Waste Management Plan (ES Volume III, Application Document Ref. 6.3)**.

Quay Wall Construction

- 5.3.29 The quay wall and associated wing walls would be constructed from the River Tees using marine plant. This is expected to be supplemented by construction plant operating from the landside at the top of the embankment. An alternative construction methodology would require the import of fill material to create a temporary construction bund in the River Tees in front of the existing embankment. In this case, the quay wall would be mainly constructed through the bund using land-based piling rigs. The construction from the bund is expected to be supplemented with jack up barges to construct some sections of the quay wall. The fill to construct the bund would be imported by ship and discharged in front of the existing embankment. It would be provided with a temporary protection layer against wave erosion. When construction of the quay and wing walls is completed, the imported material in front of the quay wall would need to be dredged out. This material will be assessed and used to raise development platform elevations on the Main Site, where practicable. If the material is not viable for reuse, it will be removed by vessel for disposal at sea or at an onshore location.
- 5.3.30 The piles for the quay wall and other quay construction material, including fill material, would be delivered either by dumb barges and tugs or potentially also by road.
- 5.3.31 For the crane beam, the construction of the piled support and the crane beam would be a landside operation. Tie rods, where required, would be placed in trenches excavated through existing made ground.

Use of the Quay Wall as a Marine Off-loading Facility (MOF) During Construction

5.3.32 Vessels using the quay as a MOF during construction phase are expected to include:

- Vessels up to approximately 6.5m - 7m draught supplying large process plant modules and AILs for construction of the SAF plant and associated facilities. These vessels will be heavy-lift ocean going vessels such as MC/CY Class vessels. These vessels are self-ballasting so that the AILs can be unloaded directly over the side or stern of the vessel utilising self-propelled modular transporters (SPMTs) at the quay as a roll on/ roll off (RoRo) operation;
- Up to approximately 1.2 million m³ of granular fill could be imported by road to raise ground levels across the Main Site as assessed in **Chapter 18: Traffic and Transport (ES Volume I, Application Document Ref. 6.1)**. However, up to 400,000 m³ of the granular fill could also be delivered by marine transport using bulk carriers, which would reduce the volume of road-borne traffic required. For this option, the material is expected to be unloaded from marine vessels by a grab crane or similar. Alternatively, self-discharging vessels could be used.
- Barges of various sizes would be used to supply construction materials. It is expected that these materials would be lifted off by crane as a load on/ load off (LoLo) or RoRo operation. Some of the quay construction materials are also expected to be supplied by road.

Capital Dredging

5.3.33 Capital dredging will be required to form the berthing pocket and access channel for ships using the quay during construction. This is anticipated to involve the following:

- The berthing pocket in front of the quay would be approximately 300m long and 55m wide and would be deep enough to allow vessels to remain moored at the quay at all states of the tide. It is anticipated that the berthing pocket would therefore need to be dredged to a maintained depth of -14m relative to Chart Datum (CD) (i.e. 16.85m below Ordnance datum (OD)). The capital dredging would excavate to approximately 500 mm below the maintained depth level to allow for siltation plus an additional 500mm over dredge. The dredged level would be lower (up to 2m) in front of the quay in order to allow placement of scour protection, if required (see below).
- An approach channel would also need to be dredged between the existing marine vessel turning circle in the River Tees and the berthing

pocket. The approach channel would be dredged to allow a maintained depth of -10.4m to -11mCD (13.25m to 13.85m below OD). This approach channel would be tidally restricted, meaning larger vessels would need to wait for the appropriate tidal window. However, smaller vessels could navigate across this area at all states of the tide. For the Deemed Marine Licence application that forms part of the DCO application, there will be an additional allowance of 500mm for over dredge tolerance and a further 500mm safety margin, to ensure that the dredging remains within the licensed limit. The existing No. 4 Winker Buoy will need to be temporarily relocated.

- Excavation of side slopes between the dredged areas at different depths.
- As noted above, in front of the quay wall, it may be necessary to provide underwater scour protection on the riverbed. This could comprise concrete or asphalt mat or rock, or a combination of these. It would be necessary to temporarily dredge a trench to place the scour protection. The top of the scour protection would be placed 300 to 1000mm below the maintained dredge level and the underside of the temporary trench would be approximately up to 2m below the top of the scour protection, approximately up to -17mCD (19.85m below OD).
- The dredged material would be disposed of at an existing licensed marine disposal site known as Tees Bay C, unless otherwise agreed with the MMO. Where offshore disposal is not possible, it would be transported off-site and disposed of at an onshore permitted landfill site. It is possible that dredged material containing undisturbed mudstone could be used as engineering fill material to raise site levels; this would be confirmed following testing of the quality and suitability of this material.
- Periodic maintenance dredging is expected to be required to achieve the maintained depth. This could be carried out by either the statutory harbour authority or by the Applicant.
- To provided unimpeded vessel manoeuvring access from the turning circle to the quay, it may be necessary to permanently remove or relocate the existing Tees No. 21 Buoy.

5.3.34 It is estimated that 400,000 to 800,000m³ of material would be dredged in total.

5.3.35 Alternatively, the dredging could be carried out in two stages, with initial dredging being limited to the minimum required to facilitate the construction

phase delivery of materials, and then a second dredge to full depth to suit vessels using the quay during operational phase.

- 5.3.36 Dredging equipment is expected to comprise use of up to two backhoe dredgers each with self-propelled hopper barges and a tug. Alternatively, dredging could be carried out by a cutter suction dredger and self-propelled hopper barges or possibly a trailing suction dredger for the softer riverbed material. The choice of dredging method would be dependent on contractor equipment availability and appropriate investigation and testing of the sediment.
- 5.3.37 Dredge operations are anticipated to be continuous and operate 24 hours a day and seven days a week. Dredging could take around five months to carry out, depending on the final dredged volume, the dredging equipment selected and the ease of dredging.
- 5.3.38 The Deemed Marine Licence, which forms part of the **draft DCO (Application Document Ref. 3.1)**, includes the ability to survey for Unexploded Ordnance in advance of dredging works, however, should any UXO be located, this will be removed and disposed of further to a separate marine licence to be agreed with the MMO.

Main Civil and Process Works

General

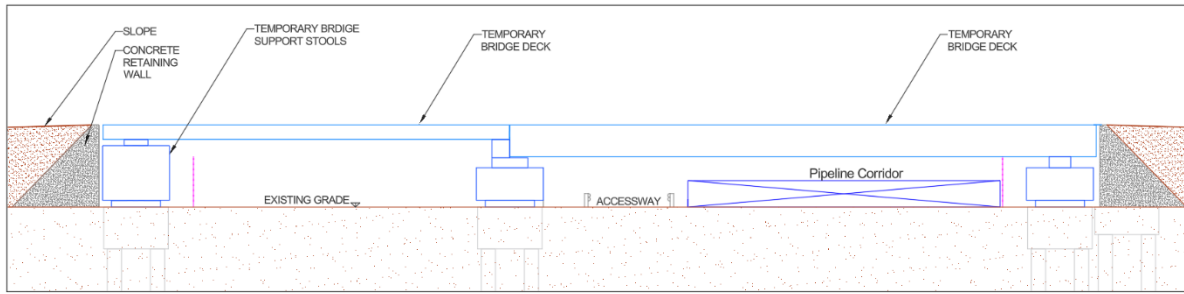
- 5.3.39 Construction on the Main Site will use a mix of modular and conventional construction techniques. The contractor will prepare the Main Site, followed by piling and civils works for some of the larger modular elements of the SAF Production Facility. Other buildings and structures may be constructed on piled or raft foundations.
- 5.3.40 Modular plant will be imported by ship and unloaded at the new quay and then moved from the quay to the construction site, potentially using SPMT or equivalent specialist transport systems, from delivery at the quayside to final location on site. To allow the SPMT to access the proposed SAF Production Facility location on the Main Site, it will be necessary to construct a crossing of the existing Linkline pipeline corridor which traverses the Site where it is not practicable to use existing crossings (see paragraphs 5.3.46 to 5.3.52 below).
- 5.3.41 Following site preparation and laying of the groundwork and foundations for module installation, the EPC contractor will commence the installation of modular plant using cranes or other lifting equipment. The maximum height of cranes to be utilised during the construction phase will be 155m (15m above the tallest permanent structure). In accordance Civil Aviation Authority guidance, aviation warning lighting will be installed where

necessary, with outline details for this provided in **the fCEMP (ES Volume III, Application Document Ref. 6.1)**, which is secured by Schedule 2 (Requirements) to the **draft DCO (Application Document Ref. 3.1)**.

- 5.3.42 Based on the expected ground conditions, it is expected that Continuous Flight Auger (CFA) piling will be the primary piling method used on the Main Site. Other techniques which may be required in specific situations could include use of percussive piling and/or vibro-piles. Percussive piling will be required for the quay construction works. The use of percussive piling is assessed in **Chapter 11: Freshwater and Marine Ecology (ES Volume I, Application Document Ref. 6.1)** as the worst-case.
- 5.3.43 The design and depth of piling either on land or in the marine environment will be confirmed through a ground investigation to be undertaken prior to finalising the construction and foundation design. A Piling Risk Assessment will be undertaken in accordance with Environment Agency guidance to consider and mitigate the risks of causing new pollutant linkages and/or worsening existing linkages with respect to risks to controlled waters during construction of the Proposed Development. This is secured by a requirement in the **draft DCO (Application Document Ref. 3.1)**.
- 5.3.44 As set out in **Chapter 9: Noise and Vibration and Chapter 12: Terrestrial Ecology (ES Volume I, Application Document Ref. 6.1)**, where possible the piling method will also be designed to reduce the risk of disturbance to birds or other noise sensitive ecological or human receptors.
- 5.3.45 The fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3) includes the following commitments:
- a requirement for the contractor's Piling Risk Assessment to form the basis of contingency plans which provide details of specific clean-up and pollution control measures which would be used in the event of an accidental spillage; and
 - a requirement for the contractor's Piling Risk Assessment to include pollution prevention measures that would be used to minimise the risk of accidental spillage.

Linkline Corridor Crossing

- 5.3.46 The Linkline corridor crossing (see [Inset 5.1](#)) is proposed to be constructed comprising an elevated temporary bridge to provide a dedicated heavy-haul access route across the corridor to facilitate the delivery and installation of large process modules and other AILs which cannot pass under the existing pipe bridges. The crossing will be located on the northern Section of the Linkline corridor as it crosses the Main Site.



Inset 5.1 Indicative cross section of the Linkline corridor crossing

- 5.3.47 Transportation is anticipated to be undertaken using SPMTs. Approach ramps on both sides of the bridge will provide a suitable gradient and loading for SPMT and heavy-haulage operations following detailed pavement and geotechnical design.
- 5.3.48 The proposed bridge will be approximately 40m long and 30m wide, with approximately 130m long ramps on either side of the bridge (dimensions subject to detailed design), spanning the Linkline corridor. The final design will be developed following detailed survey, ground investigation and consultation with the operator and asset owners.
- 5.3.49 The bridge will provide sufficient underside clearance above the existing surrounding ground level to allow continued access beneath the structure and maintain the ability to inspect and maintain both the bridge and the assets within the Linkline corridor. In case major pipeline inspection, repair, replacement or emergency intervention requires greater access or the removal of part of the bridge structure, under such circumstances the bridge design will incorporate a removable/temporary deck arrangement as means of providing access. The construction methodology will be developed to minimise vibration, ground movement and loading effects on pipelines in the Linkline corridor.
- 5.3.50 The construction of the approach ramps is anticipated to require approximately 6 months and installation of the bridge is expected to take an additional month.
- 5.3.51 The bridge is anticipated to remain in place for the duration of the principal heavy-module transportation and construction activities. Following completion of the major module movements, the temporary bridge structure will be removed and the affected areas reinstated in accordance with the approved construction and environmental management requirements, with exception of the piled foundation which will be left in situ.
- 5.3.52 The final dimensions, structural arrangement, materials, foundation solution, construction methodology, loading capacity, duration and maintenance arrangements will be confirmed through detailed design and

consultation with the operator of the Linkline corridor and other relevant asset owners.

Construction of Utility Connections

Electrical Connections

- 5.3.53 As set out in **Chapter 4: Proposed Development (ES Volume I, Application Document Ref. 6.1)**, the Applicant is progressing through the connection process for a connection to the local 11kV grid network which will be constructed and operated by the District Network Operator (DNO), Northern Powergrid (Work No. 7B).
- 5.3.54 In addition, a high voltage connection will be constructed to the North Bank Supply Point located to the south of the Main Site (Work No. 7A). It is proposed that the new electrical cable and control cables under Work No. 7A would be constructed through previously developed but now vacant and cleared land and would follow other cables known to run in this location, subject to agreement with the landowner. Cables will be installed using an open-cut methodology at a depth of approximately 1.1 m, overlain by suitable protective tiles and warning tape, and covered using conventional excavation and backfilling techniques. A crossing of the east west Linkline corridor existing third party pipelines would be required, which may require use of trenchless crossing techniques. This land required for this connection is included in Site and can accommodate a number of potential alternative cable routings to the Supply Point.
- 5.3.55 Figure 4.3: Parts of the Wider Site (ES Volume II, Application Document Ref. 6.2) and Connection Route Plans (Application Document Ref. 2.9) shows the indicative route of the off-site electrical connection.

Natural Gas Connection

- 5.3.56 Natural gas will be supplied to the Proposed Development by a connection to the existing Above Ground Installation (AGI) within the Main Site or alternatively a new direct connection to the National Transmission System (NTS). It is expected that gas connection and works on NTS infrastructure will be completed by National Gas Transmission.

Water Connections

Raw and Potable Water

- 5.3.57 Raw and potable water connections will be supplied using either existing or new connections to Northumbrian Water Ltd (NWL) infrastructure either on or adjacent to the Main Site using standard open cut construction.

Surface Water Drainage

- 5.3.58 An extension of the existing surface water outfall will be constructed as part of the quay works with the outfall relocated to the southern wing wall of the quay, to allow discharge of clean surface water run-off to the River Tees.

Treated Industrial Wastewater

- 5.3.59 For discharge of treated industrial wastewater, a new pipeline will be constructed from the Main Site to NWL's Bran Sands Wastewater Treatment Works (WwTW) (Work No. 10). The new pipeline will run north from the Main Site within the Linkline corridor up to the head of an existing tunnel crossing under the Tees and then through the tunnel to South Tees. In South Tees, the new pipeline will continue from the tunnel head house along the north bank of the Dabholm Gut and then be connected to NWL's Bran Sands Wastewater Treatment Works (WwTW). To construct the new wastewater pipeline it will be necessary in advance to remove an existing pipeline within the pipeline corridor (including within the tunnel) to make space for construction of the new pipeline. The construction method for installing pipelines within existing pipeline corridors is described at paragraphs 5.3.62 to 5.3.72 and the route is shown on Figure 4.3: Parts of the Wider Site (ES Volume II, Application Document Ref. 6.2).
- 5.3.60 The pipeline route will either use or modify existing pipe bridges to cross existing infrastructure.

Other Pipeline Connections (Industrial Gases, Products and CO₂)

- 5.3.61 The oxygen and high pressure nitrogen pipelines are likely to be run underground using open cut techniques (see method described at paragraphs 5.3.66 to 5.3.69), or trenchless methods where required (e.g. for crossing existing infrastructure) (see method described at paragraphs 5.3.70 to 5.3.72). The other pipelines will be run above ground on existing pipe tracks/racks where practicable (see method described at paragraphs 5.3.62 to 5.3.72).

Construction method for installing above ground pipelines in existing utility corridors

- 5.3.62 Construction activities within existing pipeline corridors may include (but not be limited to) the following:
- survey of proposed new pipeline route;
 - undertaking of ground surveys (e.g. topographical, environmental, and geotechnical) including trial pits, UXO and/or Ground Penetrating Radar (GPR) surveys;
 - obtaining associated access permits and clearance certification;

- constructing and using access roads and protection of existing infrastructure/ pipelines;
- ground preparation and management of any associated excavation works;
- installation of new pipeline sections;
- construction of new and modification of existing pipe supports and bridges;
- management of lifting operations for the positioning and installation of steelwork, piping sections, valves, materials and concrete supports etc;
- installation of temporary pig launching/ receiving facilities;
- non-destructive testing of pipe work by radiography, magnetic particle inspection and ultrasonic;
- thickness surveys;
- hydrostatic piping testing;
- corrosion protection preparation and coating (including structural steel work supports) and installation of cathodic protection;
- electrical, control and instrumentation works;
- commissioning;
- reinstatement of fence lines, railing, supports, walkways and any other obstacles temporarily removed or modified by prior agreement to allow for construction and safe works access; and
- site clean-up.

5.3.63 Where practicable the newly constructed above ground pipeline will be routed in designated pipeline corridors alongside existing pipeline infrastructure after removal of the existing pipeline. The design and installation methodology will be discussed with existing asset owners and routeing carefully coordinated with other developers who plan to use these corridors.

5.3.64 Existing pipework and other infrastructure will limit the available working space at various locations on the pipeline route. It is difficult to define an exact working area and methodology at all locations due to these restrictions, but generally it is anticipated that cranes will be used to lift sections of new pipeline into position with temporary crash decks used to protect existing pipelines during these operations.

- 5.3.65 Scaffolding or Mobile Elevated Working Platforms (MEWPs) will be used to provide access at height. Access will be via existing access tracks or from temporary roads made from bog mats or similar. Hot works including welding and preparations for joint coating will need to be managed through a suitable agreed permit process considering other apparatus in the area.

Construction method for installing below ground pipelines

- 5.3.66 For open cut construction, the width of the pipeline construction corridor will vary between 10 and 25 m, depending on factors such as location and pipeline diameter. The method of installation for the sections of buried pipeline is expected to involve:
- segregating a working area using suitable fencing and safety signage;
 - removal of topsoil if present and stockpile for reuse;
 - laying out sections of pipe adjacent to pipeline route;
 - welding pipeline joints together and test welds;
 - coating pipe joints and perform checks;
 - excavating a trench to the required depth with battered sides or suitable trench
 - supports to suit the temporary works design and stockpile excavated material for reuse;
 - installation of pipe bedding material at the base of the trench;
 - lifting sections of pipeline into the trench;
 - installation of packing material around the pipe;
 - backfill of the trench with excavated material and if required remove surplus material from the site; and
 - replacement of topsoil and/or reinstatement to agreed standards.
- 5.3.67 Typically excavation depths for the largest diameter pipes are anticipated to be approximately 1.5m, but greater excavation depths may be required where pipelines cross existing services. Final details of pipe depths will be subject to survey and agreed with the existing asset owners where required.
- 5.3.68 A review of published geological and hydrogeological information and historical borehole records indicates that shallow groundwater may be encountered within the depth of the proposed open cut trenches in some locations.

- 5.3.69 Any groundwater dewatering required will be managed through the Final CEMP(s) prepared by the EPC Contractor(s) and undertaken in accordance with the requirements of the Environment Agency under the Water Resources Act 1991 [Ref 5] and The Environmental Permitting Regulations (England and Wales) 2016 [Ref 6]. Water will be settled and tested to ensure that only uncontaminated water will be discharged. To avoid flooding, drains/ controlled waters will be assessed to confirm that they have capacity to receive the volume of water likely to be produced.

Crossing of existing assets

- 5.3.70 HDD may be used proposed for the underground crossing of existing utility corridors and has been assessed as a worst case. Other techniques could include open cut methods for crossing roads or access tracks or bridging over existing pipelines, with temporary road controls such as diversion/traffic lights etc. For the CO₂ pipeline there is an option to opencut under the Linkline access tracks and then cross the corridor above the existing pipes (c. 1.5m above ground). Alternatively, use of HDD techniques involves drilling a gently curved horizontal bore from a launch site to a receiving site. The pipeline is then drawn in reverse through the bore. The HDD launch locations require the installation of sheet piles to provide anchorage for the drill rig. The number, size and depth of these sheet piles will be established by the temporary works design. The drill site will also include mud mixing plant (typically a bentonite mix), mud pumps, steering cabin, a suitable generator and a lagoon to collect drilling mud and cuttings. The stringing site is land at the other end of the bore which will be used to store sections of pipeline and for the welding and coating.
- 5.3.71 **The fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)** includes the following commitment to produce a Code of Construction Practice which would specify measures designed to minimise the risk of collapse of any HDD crossing.
- 5.3.72 Where required, the design and installation methodology for crossings of pipelines, underground services or roads will need to be discussed with the relevant asset owners during the next phase of design development. This will be detailed within the final CEMP(s), produced by the EPC Contractor(s) prior to construction and in accordance with the **fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3)**.

Construction traffic and site access

- 5.3.73 Construction access to the Main Site and associated utility connections in North Tees will be from Seal Sands Road which connects to the trunk road network via the A1185 and the A689/A19. It is anticipated that there will be a number of access points to the Main Site from Seal Sands Road. There

will also be access from Huntsman Drive to the North Tees estate for the off-site electrical connection and also to the Linkline pipeline corridor (**Figure 5.1: Construction Layout, ES Volume II, Application Document Ref. 6.2**).

- 5.3.74 In South Tees, construction access for pipeline connections would be either from the Wilton International North Gate off the A1085 Steel House Gate Roundabout and then via the internal Sembcorp Road network to the Dabholm Gut, or alternatively, via the A1053, Tees Dock Road.
- 5.3.75 There will be an estimated peak of around 180 HGV one-way movements per day to the Main Site. There will be a small number of HGV movements per day for connections south of the River Tees.
- 5.3.76 AILs may be delivered to the Main Site via the highway network. However, the primary route for AIL and module delivery will be by ship using the newly constructed quay. It is expected approximately 300 consignments in 200 shipments will be required to facilitate the delivery of modular plant and construction equipment over an 18-month period within the construction phase.
- 5.3.77 If temporary traffic signals or similar are required to facilitate the safe movement of construction vehicles on the private road networks north or south of the Tees, such as access to temporary construction compounds, where pipelines and services cross existing roads, and construction vehicle crossing points, they will be locally controlled to ensure that traffic on the local private road network has priority in terms of traffic movements. In addition, when the temporary traffic signals are not required operationally, they will be turned off. The Applicant's proposals in this regard will be set out in the final CEMP and CTMP.

Construction staff

- 5.3.78 It is estimated that there will be up to 2,200 personnel contracted to work on the Proposed Development at the peak of construction. The peak of construction activity and associated traffic is anticipated to be in 2030. Refer to **Chapter 17: Socioeconomics** and **Chapter 18: Traffic and Transport for further details (ES Volume I, Application Document Ref. 6.1)**.
- 5.3.79 Construction staff are anticipated to travel to the Proposed Development via the existing trunk road and local networks. Where possible, the Applicant will seek to maximise sustainable transport options such as public transport, cycling, car sharing or buses from transport hubs or rail stations in accordance with policy. Further detail is presented in the **Framework CTMP and Framework Construction Worker Travel Plan (CWTP) in Appendix 18C and Appendix 18D (ES Volume III, Application**

Document Ref. 6.3), each of which are secured by requirements in Schedule 2 to the **draft DCO (Application Document Ref. 3.1)**.

Construction working hours

- 5.3.80 Core construction working hours will be between 07:00 and 19:00 Monday to Friday (except bank holidays), Saturday 07:00 to 16:00 and Sunday 08:00 to 17:00. However, it is likely that some construction activities may need to be undertaken outside of these core working hours. This is principally because certain construction activities cannot be stopped, such as concrete pouring, but also potentially to manage the construction programme and ensure the completion of the works in line with the agreed timescales for commissioning.
- 5.3.81 Where works within the Proposed Development are to be conducted outside the core hours, they would comply with any restrictions in the construction hours requirement in the **draft DCO (Application Document Ref. 3.1)** and as otherwise agreed with the local planning authority, in particular regarding control of noise and traffic. Twenty-four hour working for certain activities has therefore been assessed in **Chapter 9: Noise and Vibration (ES Volume I, Application Document Ref. 6.1)** which sets out specific mitigation and control measures required to prevent disturbance from any activities outside of core working hours. A Requirement in the **draft DCO (Application Document Ref. 3.1)** secures the working hours and the approach to exceptions to the core working hours. Any such works will be carefully managed to reduce effects on the local community.
- 5.3.82 Given the above, activities that could generate a noise nuisance will not be undertaken at night (i.e. between 19:00 and 07:00) unless by prior agreement with the relevant local planning authority. Such activities include but are not limited to sheet piling, percussive piling, use of impact wrenches, concrete scabbling, use of reversing sirens, and concrete jack hammering. Noise monitoring will be installed at the boundary of the Site closest to receptors, with a daytime and night-time noise limit to be used during construction agreed with STBC and RCBC.

Storage of construction plant and materials

- 5.3.83 There will be granular surfaced laydown areas positioned close to access roads on the Proposed Development where any materials will be unloaded and then transported to the area of works. It is not envisaged that these will be used for long-term storage of materials and that storage will be for six months or less.
- 5.3.84 When not in use at the end of each shift, small mobile plant will be returned to overnight plant storage areas (which is at low risk of flooding) where drip

trays will be utilised under the various types of plant, if required to prevent spillages.

- 5.3.85 Storage areas for flammable/toxic/corrosive materials in the Main Site and on satellite compounds in the Wider Site will be located in separate secured areas. Material Safety Data Sheets (MSDS) will be available for all these materials and the Control of Substances Hazardous to Health (COSHH) assessments kept within the relevant risk assessment for the task, all subject to the EPC Contractor's assessment.

Construction utilities

- 5.3.86 It is anticipated that the use of some diesel generators will be required for construction power generation, where a wired electrical supply is not practicable.
- 5.3.87 Construction surface water management methods are included in the fCEMP (Appendix 5A, ES Volume III, Application Document Ref. 6.3).
- 5.3.88 Effluent from construction activities and foul water from welfare facilities are expected to be tankered offsite to a local treatment facility.

Lighting

- 5.3.89 Temporary generators are likely to be required during construction and mobile generators will be used along the construction corridors.
- 5.3.90 Temporary site lighting is proposed to enable safe working on the construction site in hours of darkness. Construction temporary lighting will be arranged so that glare is minimised outside the construction site. A **Framework Lighting Strategy (Appendix 13C, ES Volume III, Application Document Ref. 6.3)** has been prepared to accompany the DCO application , and a detailed Lighting Strategy will be prepared by the EPC contractor, to adhere to the principles set out in the Framework Lighting Strategy .
- 5.3.91 Lighting will be designed to minimise any potential nuisance (as far as practicable) outside of the Site in relation to views from residential receptors or light disturbance to ecological receptors.

Public Rights of Way

- 5.3.92 As described in **Chapter 3: Site and Surrounding Area (ES Volume I, Application Document Ref. 6.1)**, a Public Footpath in Redcar and Cleveland which runs from the end of Tees Dock Road to the eastern end of the Dabholm Gut and crosses the Proposed Development boundary close to the industrial gases connection. This route includes:
- Footpath 116/31, which runs along and crosses the route of the pipeline before heading south west towards Tees Dock Road and footpath 102/2;

- Footpath 102/2 runs approximately south west to north east in parallel to the internal Teesport private access road; and
 - Bridleway 116/9 follows the alignment of a rail line in parallel to footpath 102/2.
- 5.3.93 In North Tees, the King Charles III England Coast Path runs along the eastern side of Seaton Carew Road in and therefore crosses the entrances to:
- Seal Sands Road at Seal Sands roundabout;
 - an existing access track to the south of the Linkline corridor; and
 - Huntsman Drive.
- 5.3.94 All of which are proposed to be used to provide construction access to the Proposed Development.
- 5.3.95 In South Tees, the King Charles III Coast Path and the Teesdale Way both run close to the route of the construction access from Steel house Roundabout on the A1085 but will not be affected by it.
- 5.3.96 It is not anticipated that the construction phase will require any stopping up or temporary diversions of Public Rights of Way with the exception of footpath 116/31 in South Tees. This runs between the eastern end of the Dabholm Gut and BOC Ltd. Middlesborough, where short-term temporary closure and diversion may be required during the construction of the industrial gases connection in this area. Crossing controls (e.g. traffic marshalls) may also be required where the King Charles III England Coast Path crosses the access to the Linkline Corridor and the entrance to Huntsman Drive. Further details on the local footpath network can be found in **Chapter 3: Description of the Site and Surrounding Area, Chapter 10: Landscape and Visual Amenity and Chapter 15: Socioeconomics (ES Volume I, Application Document Ref. 6.1)** and the locations of the PRowS within the Site are shown on the **Access and Rights of Way Plans (Application Document Ref. 2.4)**.

[Wheel wash facilities](#)

- 5.3.97 In the interests of highway safety and air quality management, wheel cleaning facilities will be installed on site from the start of the construction phase. All HGVs which have left the paved areas and surfaced roads inside the Site will use the wheel wash as appropriate when exiting the Main Site.

Construction materials and waste

- 5.3.98 Likely volumes of construction materials and waste have been assessed as set out in **Chapter 16: Materials and Waste (ES Volume I, Application Document Ref. 6.1)**.
- 5.3.99 The use of a concrete batching plant within the Proposed Development is being considered, otherwise concrete will be imported via road.
- 5.3.100 If required, the Proposed Development contains sufficient area to enable storage of construction wastes for periods during the construction phase. Any unsuitable or contaminated construction materials may be exported via HGV via the public highway network to a local waste recycling or disposal site.
- 5.3.101 Vegetation from site clearance will be collected and, if suitable, could be mulched accordingly to be reused in site enhancement and reinstatement works.
- 5.3.102 A Site Waste Management Plan will be prepared by the Principal Contractor for approval by the relevant planning authority in accordance with the **Framework Site Waste Management Plan (Appendix 5B, ES Volume III, Application Document Ref. 6.3)** (fSWMP), as secured by Schedule 2 (Requirement) in the **draft DCO (Application Document Ref. 3.1)**.
- 5.3.103 The **fSWMP (Appendix 5B, ES Volume III, Application Document Ref. 6.3)** requires that the contractor segregates principal waste streams within the Site, prior to them being taken to a waste facility for recycling or disposal. All waste removal from the Proposed Development will be undertaken by fully licensed waste carriers and taken to permitted waste facilities.

Construction Environmental Management Plan and Site Waste Management Plan

- 5.3.104 Detailed CEMP(s), approved by the relevant planning authority and required by Schedule 2 (Requirements) of the **draft DCO (Application Document Ref. 3.1)** will control site activities to minimise any impact on the environment. This will include industry good practice measures, and specific measures set out in this ES. A fCEMP accompanies the DCO application (**Appendix 5A, ES Volume III, Application Document Ref. 6.3**).
- 5.3.105 The purpose of the CEMP is:
- to ensure nuisance levels are minimised as a result of construction;
 - to comply with regulatory requirements and environmental commitments; and

- to ensure procedures are put into place to minimise environmental effects during construction.

Commissioning

- 5.3.106 Commissioning of the Proposed Development will include testing of the process equipment and is expected to take approximately nine to twelve months. A Commissioning and Start-up Plan will be required to be agreed with the Environment Agency under the Environmental Permit, which will specify monitoring and control procedures to be used and set out a schedule of commissioning activities.
- 5.3.107 Commissioning of pipelines will involve pressure testing using water or nitrogen. Water, following testing, will be discharged to the surface water drainage system and then the River Tees if clean and with the consent of the Environment Agency. If the water is contaminated it will be tankered off-Site for treatment. On completion of nitrogen pressure testing, nitrogen will be vented to the atmosphere.
- 5.3.108 Construction good industry practice measures that will be adopted during the construction phase have been taken into account in the EIA. Construction works will be undertaken in accordance with the environmental commitments identified in **Chapters 8 to 21 (ES Volume I, Application Document Ref. 6.1)** and having regard to relevant legislation.

5.4 Summary

- 5.4.1 The construction methodologies to be utilised during construction of the Proposed Development will be confirmed during the detailed design stage. For environmental assessment purposes, a worst-case has been evaluated, based on the Rochdale Envelope and the methodologies outlined in this chapter, and is presented in each technical chapter of this ES.

References

- Ref 1 Planning Inspectorate's Advice (2026) Nationally Significant Infrastructure Projects: Pre-Application Advice on Environmental Impact Assessment. Available online: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-pre-application-advice-on-environmental-impact-assessment> [Accessed September 2026].
- Ref 2 Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites (Defra, 2009)
- Ref 3 Control of Water Pollution from Construction Sites – Guidance for consultants and contractors C532 (CIRIA, 2001)
- Ref 4 Environmental Good Practice on Site Guide C741 (CIRIA, 2015)
- Ref 5 Water Resources Act 1991 (HM Government, 1991)
- Ref 6 The Environmental Permitting (England and Wales) Regulations (HM Government, 2016)



www.lighthousegreenfuels.co.uk

