

# VikingLink

nationalgrid

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## UK Onshore Scheme

### Outline Waste Management Plan

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## Glossary & Abbreviations

Glossary of Terms	
Term	Meaning
Client	Means a person or entity who in the course of business: <ul style="list-style-type: none"> <li>· Seeks or accepts the services of another which may be used in the carrying out of a project for that person; or</li> <li>· Carries out a project on their own behalf.</li> </ul>
Controlled Waste	Household, industrial and commercial waste (not agricultural waste, waste from mines or quarries and most radioactive waste).
Duty of Care	Legal responsibility to prevent waste from being mismanaged by any person who holds it and from escaping their control.
Duty of Care Checks	Checks to ensure that only authorised persons transfer waste, and that the waste is managed legitimately, including checks on: <ul style="list-style-type: none"> <li>· The waste carrier's registration certificate;</li> <li>· The waste broker's registration certificate (if used); and</li> <li>· The Environmental Permits for waste disposal sites or proof of exemptions from permitting.</li> </ul>
Environment Agency	The main environmental regulatory body in England.
European Waste Catalogue Code	A six-digit number assigned to individual wastes to aid waste identification.
Exempt Activities	Activities not requiring an Environmental Permit (an exemption will require registration).
Hazardous Waste	Waste with hazardous properties as described in the European Waste Catalogue.
Hazardous Waste Consignment Note	A document that accompanies the movement of any hazardous waste from production (cradle) to disposal (grave).
Non-Hazardous Waste	Waste which does not display any of the hazardous properties listed in Annex III of The Hazardous Waste (England and Wales) Regulations 2005 (as amended).
Contractor	Main contractor appointed to deliver a project by the Client.
Registered Waste Carrier	A person who holds a registration certificate from the Environment Agency to transport waste.

List of Abbreviation	
Abbreviation	Meaning
AC	Alternating Current
BBC	Boston Borough Council
BMV	Best and Most Versatile
DC	Direct Current
EA	Environment Agency
ELDC	East Lindsey District Council
EWC	European Waste Catalogue
HVDC	High Voltage Direct Current
ICE	Institute of Civil Engineers
kg	Kilogram
km	Kilometre
KPI	Key Performance Indicator
kV	Kilovolt
LPA	Local Planning Authority
m	Metre
m <sup>3</sup>	Cubic metres
mm	Millimetre
MW	Mega Watt
NGVL	National Grid Viking Link
NKDC	North Kesteven District Council
OWMP	Outline Waste Management Plan
SHDC	South Holland District Council
SIC	Standard Industrial Classification
UK	United Kingdom
WCL	Waste Carrier Licence
WTN	Waste Transfer Note

**Note**

The purpose of this Plan is to set out how the mitigation commitments described within the Environmental Statement will be delivered during construction. The exact roles and responsibilities described in the Plan are subject to the appointment of a Contractor and may change. The Plan will be finalised by the Contractor prior to the commencement of construction taking into account a detailed scheme design and more precise information about construction methods and phasing.



# 1 Introduction

## 1.1 Overview

- 1.1.1 This Outline Waste Management Plan (OWMP) has been prepared for National Grid Viking Link Ltd (hereinafter referred to as 'NGVL' or 'the Client') to outline how any waste produced will be managed during the construction activities associated with the construction of the UK Onshore Scheme. This includes the proposed Direct Current (DC) cable route, the proposed converter station, the permanent access road and the proposed Alternating Current (AC) cable route.
- 1.1.2 The OWMP will be finalised by the Contractor prior to commencement of construction work on site and will be reviewed periodically and be available on site during the works.
- 1.1.3 The OWMP will:
- Identify personnel with waste management responsibilities;
  - Describe the proposed works;
  - Provide an estimation of the build cost;
  - Outline opportunities for waste minimisation/reuse in line with the requirements of the waste hierarchy;
  - Review any outline decisions taken to minimise the amount of waste produced on site;
  - Provide a forecast of waste types and estimated arisings and outline how they will be managed;
  - Set out Key Performance Indicators (KPIs) for works to minimise waste production and/or landfill diversion; and
  - A declaration that materials will be handled efficiently and waste managed appropriately.

## 1.2 The UK Onshore Scheme

### Overview

- 1.2.1 Viking Link (hereafter referred to as 'the Project') is a proposed 1400 megawatt (MW) high voltage DC (HVDC) electricity link (or interconnector) between the British and Danish high voltage electricity transmission networks which will allow electricity to be exchanged between the two countries equivalent to around 1.3 percent (%) of Great Britain's current usage.
- 1.2.2 It comprises approximately 762 kilometres (km) of DC onshore and offshore electricity transmission cables between new converter stations at each end of the link. These are in turn connected to the high voltage electricity transmission networks at existing substations at Bicker Fen, Lincolnshire in Great Britain and at Revsing, south Jutland in Denmark.
- 1.2.3 The UK onshore part of the Viking Link project is known as the UK Onshore Scheme. The UK Onshore Scheme comprises:

- Onshore underground high voltage DC cables from a landfall at Boygriff, East Lindsey on the Lincolnshire coast to a new converter station;
- New converter station at North Ing Drove, South Holland to change electricity between DC and AC or vice versa depending on direction of operation;
- Onshore underground AC cables from the converter station to new equipment within the existing Bicker Fen 400 kilovolts (kV) substation.
- Permanent access road (2.8km) long from the A52 to the proposed converter station site on North Ing Drove.

### 1.3 Document Structure

1.3.1 An overview of the content of this document is provided in

Table 1.1 Structure of this Document		
Section	Title	Description of Content
1	Introduction	Provides background information about this document and its content.
2	Project Description	Provides details of the proposed UK Onshore Scheme, including outline construction requirements.
3	Legal Requirements	Outlines the legislative requirements and context of the UK Onshore Scheme for the provision of a Waste Management Plan.
4	Management Arrangements	Sets out the key individuals involved in the construction of the UK Onshore Scheme relevant to the delivery and management of the Waste Management Plan.
5	Waste Estimation and Design Decisions	Provides an estimation of the type and quantity of waste to arise from the construction of the UK Onshore Scheme.
6	Waste Management on Site	Sets out potential management measures to be undertaken during construction to minimise the amount or quantity to arise.

## 2 Project Description

### 2.1 Project Details

#### Overview

2.1.1 Table 2.1 below provides details of the project.

Table 2.1 Project Details			
Project Component	Description		
Project Title	Viking Link – UK Onshore Scheme		
Project Reference			
Project Location	Address	East Lindsey, Boston Borough, North Kesteven and South Holland District Councils, Lincolnshire	
	Town	N/A	
	Postcode	N/A	
Client	Name	Viking Link	
	Address	TBC	
	Contact	TBC	Email
	Phone		Mobile
Contractor	Name	TBC	
	Address		
	Contact		Email
	Phone		Fax
OWMP Drafter	Name	AECOM	
	Address	5 <sup>th</sup> Floor, 2 City Walk, Leeds, LS11 9AR	
	Contact		Email
	Phone		Fax
Construction cost (estimated)	TBC		
Site Area (Gross Area)	<b>DC Cable:</b> 67.16 km in length (approx.) <b>Converter Station:</b> 30 ha (site footprint); 48,200 m <sup>2</sup> (building floor area) <b>AC Cable:</b> 2.34 km in length (approx.) <b>Permanent Access Road:</b> 2.8 km in length (approx.)		

Table 2.1 Project Details						
Project Component	Description					
Construction:						
Start Date	Day	TBC	Month	TBC	Year	2019
Completion Date	Day	TBC	Month	TBC	Year	2022
Waste Management Representative	TBC					
Representative Responsible for OWMP	Appointed Contractor					
Document Controller/ Secretary	TBC					
Location of OWMP on Site	Named site office (following commencement of construction)					

## 2.2 Nature of the UK Onshore Scheme

### 2.2.1 The construction work will generally involve:

- Earthworks including excavations to allow the installation of services including:
  - Installation of underground DC cables: typically, the cables are around 150 millimetres (mm) in diameter and will operate at a voltage of 500 kV.
  - Installation of underground AC cables to connect the converter station to the existing high voltage electricity transmission system substation.
  - Installation of new service tracks for water, gas and electric supply;
  - Installation of a new sewerage/foul drainage system; and
  - Installation of surface water drainage.
- Construction of a 24 metres (m) tall converter station, this will include:
  - Control room building;
  - Converter power electronics and associated DC equipment;
  - AC switchgear;
  - Ancillary equipment; and
  - Spares store building.
- Ground level re-profiling, of which any cut material from excavations is anticipated to be re-used within the development; and
- Earthworks and surfacing to construct access roads.

- 2.2.2 During construction there will be temporary construction compounds, stockpiling, construction areas and access arrangements.

## 2.3 Project Location

- 2.3.1 The UK Onshore Scheme starts at the proposed landfall site at Boygriff in East Lindsey. At the proposed landfall site it extends from Mean Low Water Springs (MLWS) across the intertidal zone with two submarine high voltage DC cables and one fibre optic cable. These will be installed in ducts below the existing flood defences and terminate at a buried transition joint pit (TJP). The TJP will be located inland (west) of the existing flood defences.
- 2.3.2 From the TJP the proposed underground DC cable route extends approximately 67.16 km inland in a broadly western or south western direction until it reaches the proposed converter station site at North Ing Drove, South Holland. This comprises two underground high voltage DC cables (for transmission of electricity) and up to three fibre optic cables (two for monitoring the performance of the DC cables using Distributed Temperature Sensing (DTS) and one for communications between the proposed converter stations in Great Britain and Denmark).
- 2.3.3 The proposed DC cable route extends across the administrative areas of East Lindsey District Council (ELDC) (51.60 km), Boston Borough Council (BBC) (9.78 km), North Kesteven District Council (NKDC) (4.80 km) and South Holland District Council (SHDC) (0.98 km). The planning application boundary includes all of the land required during construction including at various locations along the proposed DC cable route areas that have been identified for temporary construction compounds (TCCs), temporary works areas (TWAs), land drainage and water management as well as access.
- 2.3.4 The proposed converter station site including associated mitigation and land required for construction occupies a field approximately 30 hectare (ha) in size. At the converter station electricity will be converted from DC to AC (or vice versa depending on the direction of operation). The proposed converter station will be connected to the existing National Electricity Transmission System (NETS) at Bicker Fen 400 kV Substation by approximately 2.34 km of proposed AC underground cable which is routed in a broadly northern direction. Access to the proposed converter station will be provided by a new 2.8 km long permanent access road from the A52.

## 3 Legal Requirements

### 3.1 Introduction

3.1.1 This section summarises the key legal requirements with regards to waste management and control within the UK.

### 3.2 Definition of Waste

3.2.1 The legal definition of waste is “any substance or object which the producer discards or intends or is required to discard”.

3.2.2 The legal definition of waste also covers substances or objects, which fall outside of the commercial cycle or out of the chain of utility. In particular, most items that are sold or taken off-site for recycling are wastes, as they require treatment before they can be resold or reused.

3.2.3 In practical terms, wastes include surplus spoil, scrap, recovered spills, unwanted surplus materials, packaging, office waste, wastewater, broken, worn-out, contaminated or otherwise spoiled plant, equipment and materials. A list of the wastes predicted to be generated by the UK Onshore Scheme is presented in Table 5.1 and Table 5.2, separated as the proposed converter station and the installation of the proposed underground DC and AC cables, respectively.

### 3.3 Waste Regulations 2011

3.3.1 The Duty of Care related to waste management as directed by the Waste (England and Wales) Regulations 2011 (SI 2011 No. 988)<sup>1</sup> (as amended in 2012) state that anyone in possession of waste must:

- Prevent illegal disposal, treatment or storage of waste;
- Prevent the escape of wastes;
- Ensure transfer of waste to an authorised person;
- Provide an accurate written description of the waste in order to facilitate the compliance of others with the Duty and avoidance of the offences under Section 33 of the Environmental Protection Act 1990: via a compulsory system of Controlled Waste Transfer Notes which controls the transfer of waste between parties; and
- All those subject to the Duty should confirm conformance by others "in the chain" to the requirements of the Duty to an extent which is "reasonable in the circumstances". All breaches of the Duty should be reported to the Environment Agency (EA).

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<sup>1</sup> The Waste (England and Wales) Regulations 2011 SI2011/988, London: HMSO, 2011 (Amended in 2012)

- 3.3.2 Recent revisions to the Waste Framework Directive have been implemented in England and Wales through the Waste (England and Wales) Regulations 2011 and ancillary legislation in Wales, which were both introduced in April 2011. In summary, the regulations:
- Require businesses to confirm that they have applied the waste management hierarchy when transferring waste and to include a declaration on their Waste Transfer Note (WTN) or consignment note;
  - Requires businesses undertaking waste management activities such as import, production, collection, transportation, recovery and/or disposal to take all reasonable measures to apply the following waste hierarchy:
    - Prevention;
    - Preparation for reuse;
    - Recycling;
    - Other recovery such as energy recovery; and finally
    - Disposal.
  - Introduce a two-tier system for waste carrier and broker registration, which includes those who carry their own waste, and introduces a new concept of a waste dealer;
  - Make amendments to hazardous waste controls and definition;
  - Exclude some categories of waste from waste controls, notably animal by-products whilst including a small number of radioactive waste materials; and
  - Require that local authorities who collect waste paper, metal, plastic or glass arrange to collect these waste streams separately.

### 3.4 Hazardous Waste Regulations

- 3.4.1 The Hazardous Waste (England and Wales) Regulations 2005 (SI 2005 No. 894)<sup>2</sup> (as amended)<sup>3</sup> require that a consignment note be used to document the disposal of all hazardous waste. If the site generates in excess of 500 kilograms (kg) of hazardous waste in a period of twelve months, then the Contractor will be required to register the site as a hazardous waste producer.

### 3.5 Registration of Waste Carriers

- 3.5.1 Under The Control of Pollution (Amendment) Act 1989<sup>4</sup> it is a criminal offence for anyone not registered as a carrier, to transport Controlled Waste. The Waste Regulations 2011 details a system for the registration of carriers and also specifies procedures for the seizure and disposal of vehicles used for illegal waste disposal.

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<sup>2</sup> The Hazardous Waste (England and Wales) Regulations 2005 SI 2005/894, London: HMSO, 2005

<sup>3</sup> The Hazardous Waste (England and Wales) (Amendment) Regulations 2009 SI2009/507, London: HMSO, 2009

<sup>4</sup> Control of Pollution (Amendment) Act 1989 CHAPTER 14, 1989

- 3.5.2 Once appointed details of the waste carriers and contractors will be included in the OWMP including copies of appropriate licences.
- 3.5.3 From January 2014, anyone undertaking the following activities as part of their business must register as a waste carrier, broker or dealer to:
- Transport their own waste;
  - Transport or dispose of waste for someone else;
  - Buy or sell waste; or
  - Act as a waste broker (arrange for someone to handle other people's waste).

### 3.6 Environmental Permits and Exemptions

- 3.6.1 The Environmental Permitting (England and Wales) Regulations 2010<sup>5</sup> (as amended)<sup>6, 7, 8</sup> require sites where waste is processed, treated or disposed of to hold a valid Environmental Permit issued by the EA. The Regulations also include a schedule of activities that are exempt from the requirements of permitting, most of which must be registered with the EA.
- 3.6.2 However, a permit is not required where waste is stored on the site where it is produced, prior to off-site disposal; and as such an exemption may need to be registered with the Environment Agency. Other exemptions exist for wastes stored other than at the premises where it was produced. Such exemptions are termed as 'Non Waste Framework Directive Exemptions'.
- 3.6.3 The list of Exempt Waste Activities Not Requiring Registration is as follows:
- **General Waste.** May be temporarily stored at a secure place on the site of production or treat waste which would help with its storage and collection pending its collection for up to 12 months;
  - **Non Liquid Waste.** Up to 50 cubic metres (m<sup>3</sup>) may be stored at a place controlled by the producer, for up to 3 months as long as it is stored in secure containers, does not compromise of unbonded asbestos, the flash point of the waste is higher than 21 degrees centigrade (°C) and different waste types are not mixed; and
  - **Liquid Waste.** Up to 1,000 litres may be stored at any one time at a place controlled by the producer for up to 3 months as long as it is stored in a container with secondary containment, the flash point of the waste is higher than 21°C, and different waste types are not mixed together.
- 3.6.4 Where required the Contractor will obtain necessary permits/exemptions.

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<sup>5</sup> Environmental Permitting Regulations SI 2010/675, London: HMSO, 2010 (Amended in 2012)

<sup>6</sup> Environmental Permitting (England and Wales) (Amendment) Regulations SI2012/630, London: HMSO, 2012

<sup>7</sup> Environmental Permitting (England and Wales) (Amendment) Regulations SI2013, London: HMSO, 2013

<sup>8</sup> Environmental Permitting (England and Wales) (Amendment) Regulations SI2014/255, London: HMSO, 2014

## 4 Management Arrangements

### 4.1 Roles and Responsibilities

Table 4.1 Roles and Responsibilities			
Position	Name	Contact Details	OWMP Responsibility
Client Representative	TBC	TBC	Ensure OWMP preparation and review implementation with Contractor
Design Team Manager	TBC	TBC	Provide OWMP information from design
Site Manager	TBC	TBC	Implementation of OWMP requirements during construction and maintenance of appropriate records. Brief of site personnel including sub-contractors regarding OWMP requirements at induction. Complete regular waste TBT with site personnel throughout the construction phase.
Document Controller	TBC	TBC	Maintain a copy of the OWMP throughout the project and maintain waste records.
Individual Sub-Contractor(s), as appointed	TBC	TBC	Responsible for: <ul style="list-style-type: none"> <li>Read through, familiarise and understand this OWMP;</li> <li>Produce their own waste documentation and management plan; and</li> <li>Comply with the requirements set out in this OWMP.</li> </ul>

### 4.2 Instruction and Training

- 4.2.1 The Contractor representative will be briefed prior to work commencing on site.
- 4.2.2 OWMP requirements will be incorporated into the site induction and the Contractor will provide on-site instruction of appropriate separation, handling, recycling, re-use and return methods to be used by all parties' at all appropriate stages of the project.
- 4.2.3 All personnel working on the site including sub-contractors will be inducted. Induction will include showing personnel the available recycling arrangements.

- 4.2.4 Tool-box talks on waste and materials management will be completed monthly for all site personnel including sub-contractors. This will ensure that everyone feels they are included and that their participation is meaningful.
- 4.2.5 The OWMP will also be mentioned in the site induction process.

### **4.3 Project Performance Indicators**

- 4.3.1 The following are proposed targets to be confirmed as Client KPIs for the development:
- Recover (through waste reuse or recycling) at least 95 % of waste construction materials (by volume); and
  - Achieve Waste Recovery (diversion from landfill) of 100 % for all non-hazardous excavation waste.
- 4.3.2 Where practicable, and given the minimum construction quality requirements, incorporate the use of locally sourced construction materials derived from reused and recycled materials, and report on actual performance.

## 5 Waste Estimation and Design Decisions

### 5.1 Introduction

- 5.1.1 This OWMP identifies the likely wastes that will be generated from the UK Onshore Scheme, and their quantities.
- 5.1.2 At the current stage, insufficient design information is available to make accurate estimates of waste types and quantities. Estimates will be included in subsequent versions of the OWMP as information becomes available, and updated to include actual data as the project progresses.
- 5.1.3 Table 5.1 will be completed to present the estimated and actual waste volumes for the converter station construction and Table 5.2 will be completed to show the estimated and actual waste volumes for the installation of the underground cables and associated earthworks.
- 5.1.4 The percentage targets for reuse and recycling of waste at site are based on guidance for best practice waste recovery KPIs as specified by WRAP in the document 'Waste Recovery Quick Wins'. These figures are presented in Table 5.1 and Table 5.2. The KPIs will be reviewed and updated as the project progresses to reflect the client's targets.
- 5.1.5 The principles of the waste hierarchy (eliminate, reduce, reuse, recycle, recover, disposal) will be applied to ensure best practice on site and to sustain high levels of sustainability in the development of the UK Onshore Scheme as a whole. It is intended that this OWMP should be an evolving document during the course of the project and as such regular monitoring and reviews will be undertaken to ensure continual improvement, legal compliance and that cost effective solutions are in place.

### 5.2 Other Waste Management Recommendations

- 5.2.1 The following strategic decisions will be implemented by the project team to ensure that specific and overall waste generation associated with the development of the site was either eliminated or reduced at the earliest stage in accordance with the waste hierarchy:
- Demolition materials will be processed and retained on site for use where feasible (e.g. for use as road sub-base).
  - Elements will be pre-fabricated off site, where feasible.
  - The use of recycled or secondary aggregates will be encouraged where feasible.
  - A cut and fill balance will be achieved as far as reasonably practicable.
  - Packaging take back from suppliers will be written into supply contracts where feasible.
  - Achieve diversion from landfill where feasible.

### 5.3 Waste Arisings

- 5.3.1 Waste arisings from the construction of the converter station will be estimated based on the calculations included in the SMART Waste Data Report and presented in Table 5.1 along with the proposed recycling, recovery and disposal targets. These estimates will be updated as the project progresses.
- 5.3.2 Waste arisings for the installation of the underground cables and earthworks will also be estimated and presented in Table 5.2 with the recycling, recovery and disposal targets.
- 5.3.3 Given the nature of the development, there will be the opportunity to reuse materials on site to backfill excavations or adjust local site levels. Where unsuitable for reuse on site, excavated material will be taken off site for recovery/recycling at suitable waste management facilities.
- 5.3.4 The main types of waste that are likely to be generated have been identified. These are:
- Surplus soil left over from trench installation once the cable has been installed; and
  - Soil arising from trenchless excavations (e.g. horizontal directional drilling or other techniques) for crossing roads and watercourses.
  - Aggregate used for site compounds and access roads.
  - General mixed construction waste (including packaging, timber and catering wastes) from material deliveries, construction compounds and site offices.
  - Inert construction waste (e.g. concrete, bricks and tiles) from construction of the convertor station.
  - Excavated soil from foundations of convertor station
  - Very small quantities of hazardous wastes from any on-site maintenance of mobile plant.

**Table 5.1 Waste Generation Estimates for proposed Converter Station Construction**

Waste Stream	Estimated volume calculated from m <sup>2</sup> or cost of development (m <sup>3</sup> )	Actual Waste Volume (m <sup>3</sup> )	Proposed Method of Handling Waste Type (%)				Estimated Waste Recovered* (m <sup>3</sup> )	Estimated Waste Disposed (m <sup>3</sup> )	Comments
			Reuse	Recycling	Recovery	Landfill			
Asphalt	TBC			100					
Binders	TBC				95	5			
Bricks	TBC			100					
Canteen/office/ adhoc waste	TBC			75					Canteen/office waste has been assumed to include food waste that will not be recovered.
Concrete	TBC			100					
Electrical equipment	TBC			100					
Floor coverings (soft)	TBC			100					
Furniture	TBC				50	50			
Gypsum	TBC			95		5			Plasterboard
Hazardous	TBC				50	50			
Insert	TBC			100					Includes bricks, concrete, tiles, ceramics, rocks and

**Table 5.1 Waste Generation Estimates for proposed Converter Station Construction**

Waste Stream	Estimated volume calculated from m <sup>2</sup> or cost of development (m <sup>3</sup> )	Actual Waste Volume (m <sup>3</sup> )	Proposed Method of Handling Waste Type (%)				Estimated Waste Recovered* (m <sup>3</sup> )	Estimated Waste Disposed (m <sup>3</sup> )	Comments
			Reuse	Recycling	Recovery	Landfill			
									other inert waste but excludes soil.
Insulation	TBC			75		25			
Liquids	TBC				100				
Metals	TBC		25	75					
Mixed	TBC				75	25			Includes non-segregated wastes discarded together in a skip. Assumes that waste recovery will be undertaken off site.
Oils	TBC				100				
Other	TBC			90		10			Includes vegetation removed from development areas – assume the majority will be sent off site for composting.
Packaging	TBC		95			5			
Plastics	TBC		95			5			
Soils	TBC		100						Assumes that excavated material will be reused on or

**Table 5.1 Waste Generation Estimates for proposed Converter Station Construction**

Waste Stream	Estimated volume calculated from m <sup>2</sup> or cost of development (m <sup>3</sup> )	Actual Waste Volume (m <sup>3</sup> )	Proposed Method of Handling Waste Type (%)				Estimated Waste Recovered* (m <sup>3</sup> )	Estimated Waste Disposed (m <sup>3</sup> )	Comments
			Reuse	Recycling	Recovery	Landfill			
									off site following quarantine period.
Tiles and Ceramics	TBC			100					
Timber	TBC		95			5			Assumes 5% of total timber waste consists of treated wood that cannot be recovered.
<b>Total</b>									

**Table 5.2 Waste Generation Estimates for proposed Underground Cable Installation and Associated Earthworks**

Waste Stream	Estimated volume calculated from m <sup>2</sup> or cost of development (m <sup>3</sup> )	Actual Waste Volume (m <sup>3</sup> )	Proposed Method of Handling Waste Type (%)				Estimated Waste Recovered* (m <sup>3</sup> )	Estimated Waste Disposed (m <sup>3</sup> )	Comments
			Reuse	Recycling	Recovery	Landfill			
Canteen/office/ adhoc waste	TBC			75		25			Canteen/office waste has been assumed to include food waste that will not be recovered.
Concrete	TBC			100					
Electrical equipment	TBC			100					
Hazardous	TBC					50	50		
Insert	TBC			100					Includes bricks, concrete, tiles, ceramics, rocks and other inert waste but excludes soil.
Liquids	TBC					100			
Metals	TBC		25	75					
Mixed	TBC					75	25		Includes non-segregated wastes discarded together in a skip. Assumes that waste recovery will be undertaken off site.

**Table 5.2 Waste Generation Estimates for proposed Underground Cable Installation and Associated Earthworks**

Waste Stream	Estimated volume calculated from m <sup>2</sup> or cost of development (m <sup>3</sup> )	Actual Waste Volume (m <sup>3</sup> )	Proposed Method of Handling Waste Type (%)				Estimated Waste Recovered* (m <sup>3</sup> )	Estimated Waste Disposed (m <sup>3</sup> )	Comments
			Reuse	Recycling	Recovery	Landfill			
Oils	TBC				100				
Other	TBC			90		10		Includes vegetation removed from development areas – assume the majority will be sent off site for composting.	
Packaging	TBC		95			5			
Plastics	TBC		95			5			
Soils	TBC		100					Assumes that excavated material will be reused on or off site following quarantine period.	
<b>Total</b>									

## 5.4 Record of Previous Decisions Regarding Waste Management

5.4.1 No decisions regarding waste management have been taken at this stage.

## 5.5 Opportunities for Waste Minimisation

5.5.1 The following potential opportunities for waste minimisation have been identified at this stage.

### Design Stage

- Waste materials expected to be generated will be evaluated for recycling or reuse on site.
- Pre-fabrication will be used where appropriate.

### Construction Stage

- Materials Storage – a specific unit will be delivered that will provide a storage facility for delivered equipment and materials until they are required.
- Prevent import of wastes from external sources.
- Security – prevention of unauthorised access to minimise risk of fly-tipping.
- Communication plan in place to ensure awareness across the site.

## 6 Waste Management on Site

### 6.1 Site Waste Storage and Segregation Options

- 6.1.1 Excavated soils/earth materials will be stored on site in stockpiles until required for use. Excavated soils will be stockpiled alongside the trench, within the corridor, prior to installation.
- 6.1.2 Following cable installation, soil will be used for backfilling the trench, with any surplus used for levelling of the cable corridor, where feasible. There may be additional separate stockpiling of topsoil.
- 6.1.3 The construction site compound will incorporate a designated Waste Storage Area for skips or similar waste receptacles. This area will be surfaced with an impermeable barrier, such as hardstanding/tarmac or using impermeable membranes and the location of any existing drainage will be noted.
- 6.1.4 At the Waste Storage Area, waste will be segregated into the following as a minimum:
  - Waste wood;
  - Metals;
  - General waste;
  - Hazardous solid wastes; and
  - Hazardous liquid wastes.
- 6.1.5 The following waste management procedures will be implemented:
  - All skips will be enclosed and lockable to ensure no waste is allowed to escape;
  - All containers for waste storage shall be clearly labelled using a colour coding system so that users know what wastes can be placed in each container. Waste storage skips shall be appropriately colour coded using the Institute of Civil Engineer's (ICE's) generic colour codes as shown below:

**Grey: Inert**



**Green: Wood**



**Black: Mixed**



**Brown:  
Packaging**



**Blue: Metal**



**Orange:  
Hazardous**



**White: Gypsum**



- Lockable storage will be provided for all hazardous waste;
- All waste containers will be sited at least 10 m away from watercourses, ditches and other areas of environmental sensitivity;
- Liquid wastes will be stored in enclosed/lidded containers and stored within a suitable bunded area, or otherwise provided with secondary containment;
- Separate containers will be provided for each type of hazardous waste;
- Sewage from the site offices/compounds will drain to septic tank and be collected by a suitable specialist waste contractor; and
- Portable toilet facilities on site (Portaloos etc.) will be emptied by the facility provider as per their service agreement.

## 6.2 Waste Carriers

6.2.1 All waste generated on the project shall be dealt with in accordance with legal requirements. The proposed waste carrier for each waste stream will be recorded in the registration table, with Waste Carriers Licence (WCL) details appended to the OWMP. A table for demonstrating waste carrier registration is shown in Appendix B.

6.2.2 The Contractor will ensure that the following is collected for all waste contractors:

- Contractors name;
- Date(s) of waste removal;
- Type(s) of waste removed (i.e. non-hazardous waste, hazardous waste, inert (specify));
- Method of treatment, recovery or disposal (i.e. reuse, recycling, incineration, landfill etc.);
- Volume or weight of waste removed; and
- Costs associated with waste removal, transport and treatment, including Landfill Tax charges where applicable.

## 6.3 Waste Documentation

### Waste Transfer Note (All Waste)

- 6.3.1 All movements of waste from site must be accompanied by a WTN, which will detail specific information. The Contractor, either via a 'Waste Champion' or other competent person, will check that each WTN contains the following:
- The name of the person receiving the waste and what they are authorised to do with that waste as a Registered Waste Carrier can only transport waste;
  - Type of waste produced;
  - The 2007 Standard Industrial Classification (SIC) code (2003 SIC if hazardous waste);
  - The six-digit European Waste Catalogue (EWC) number;
  - Address of the producing site and details of the waste producer;
  - Waste carrier's details including WCL No;
  - Quantity of waste;
  - How it is contained (e.g. 8 yard skip);
  - Address of the receiving site (e.g. landfill) and the Environmental Permit or Exemption No. associated with the receiving site;
  - The date to which the WTN applies;
  - If the material is non-hazardous waste and it is destined for disposal directly to landfill, pre-treatment must have been applied and a declaration detailing treatment applied appended to the WTN; and
  - A declaration that the waste has been treated in line with the requirements of the waste hierarchy.
- 6.3.2 The site representative signing the WTN shall ensure all WTNs are placed in the Site Waste Management File and kept for a minimum period of three years.
- 6.3.3 By signing a WTN the site representative is confirming that all the details are correct and that the material is to be sent by a licensed waste carrier to a suitably licensed receiving site, permitted to receive that type of waste. The signature is binding of this fact and completes the WTN as a legal document, which must be retained for a minimum of two years (three years if it is hazardous waste).
- 6.3.4 The Waste Champion or other competent person signing the WTN shall additionally ensure that the Waste Carrier is using a suitable vehicle with adequate, covered containment for the waste.

### Waste Consignment Note (Hazardous Waste)

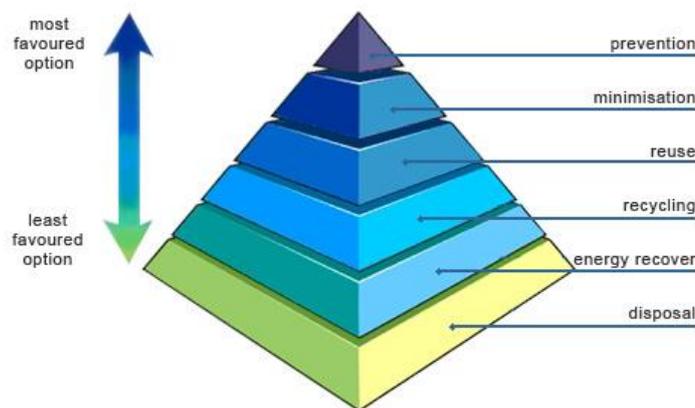
- 6.3.5 A Hazardous Waste Consignment Note shall be completed for every movement of hazardous waste. Prior to signing, the Waste Champion or other competent person shall ensure that the Hazardous Waste Consignment Note includes:
- Hazardous Waste Premises Code (for sites in England and Wales only);

- Consignment note code;
- SIC Code;
- Name and address of site from which waste is being moved;
- Date of removal;
- Type of waste produced, including the quantity and the EWC code;
- The name of the person who is receiving the waste and what they are authorised to do with that waste e.g. Registered Waste Carrier can only transport waste;
- A final disposal site that is authorised to accept the waste; and
- Retention period for hazardous waste.

## 6.4 Waste Management Routes

### Introduction

6.4.1 The waste hierarchy is a concept that encourages the management and reduction of waste material. The aim is to recover the maximum value from projects by reducing financial losses through material loss during construction. The waste hierarchy is a complex process influenced by the optimal management of any given product/waste. A basic representation of the waste hierarchy is provided below in Figure 1 and the hierarchy will be considered as a guide to encourage the prevention of waste, followed by reuse and the recycling.



**Figure 1: Waste Hierarchy**

6.4.2 All waste management options at the site will consider the site’s location, natural environment, and available infrastructure. The options presented below are required to produce waste reduction mechanisms.

### Preparing for Reuse

- 6.4.3 The aim is to provide design features on the development to use materials in their current state and form. This can occur either on site or off site
- 6.4.4 All soil materials excavated within this phase of work will be stockpiled and reused on site. As there is no intention to discard soil materials these arisings are not considered waste.

### Recycling

- 6.4.5 The aim is to re-use materials won on site by recycling them into an alternative form that can be used for any construction purposes (for example crushing concrete or other inert wastes for road construction material or sending green waste for composting). By recycling on site as far as practicable, carbon emissions are reduced from taking materials away from the development.

### Recovery

- 6.4.6 This generally aims to recover energy from waste which cannot be otherwise reused or recycled. It is expected that this will include any waste materials such as hazardous liquids or solids which could be sent to energy from waste plants.

### Disposal

- 6.4.7 The least preferred option is where the waste stream would be subject to a final disposal route such as landfill. Some waste streams will inevitably end up with such a solution.
- 6.4.8 The placing of waste disposal contracts will, where possible, consider the implications of long distance travel in terms of health and safety risk, commercial terms and increased emissions from vehicles. Wherever possible, contracts are to be awarded as locally as possible.
- 6.4.9 All hazardous and non-hazardous wastes must be pre-treated prior to disposal to landfill. The methods of pre-treatment will enable the waste to meet the 'three-point test':
- It must be a physical, thermal, chemical or biological process including sorting;
  - It must change the characteristics of the waste;
  - It must do so in order to:
    - reduce its volume, or
    - reduce its hazardous nature, or
    - facilitate its handling, or
    - enhance its recovery.
- 6.4.10 Source segregation can be seen as a pre-treatment option and as such can be applied to waste generation on site including general waste and arisings, and will take place on the project.
- 6.4.11 A declaration stating the pre-treatment method applied to the waste will be appended to any WTN for non-hazardous waste being disposed of to landfill, and will accompany the WTN.

### Fly Tipping

- 6.4.12 Fly-tipping of waste on or adjacent to ongoing construction projects can be a significant issue.
- 6.4.13 Should waste be fly-tipped on the site, the Contractor has a Duty of Care to ensure it is dealt with safely and disposed of correctly, even though not the producer of the waste. Any instance of fly-tipping will be reported to the local council.

### Burning of Waste

- 6.4.14 No burning of any waste will be permitted on site or at the site compounds.

## **6.5 Waste Documentation**

- 6.5.1 All waste documentation will be retained at the main site compound, and following completion of the project at the Contractor's head office. This includes:
- OWMP (two years after end of project);
  - Waste transfer documentation (two years for WTNs and three years for hazardous waste consignment notes);
  - Copies of any exemptions or permits; and
  - Copies of waste carrier and disposal site licences.

## **6.6 Reporting, Monitoring and Auditing**

- 6.6.1 The effectiveness of the OWMP will depend upon the enforcement of its requirements on site by the nominated Waste Champions and Site Manager. Responsibility for the formal recording of waste movements lies with the Waste Champion or Project Manager.
- 6.6.2 A log will be maintained of all materials that come on to site, and details will be obtained from the each/the waste disposal company of the exact amount of waste materials removed from site. Details will also be provided outlining the recovery/disposal actions for the specific waste streams.
- 6.6.3 Waste receptacles will be monitored by the Contractor to ensure that contamination has not occurred; results will be recorded and monitored for change with time.
- 6.6.4 The Contractor will continually review the type of surplus materials being produced and change the site set up to maximise reuse or recycling and the use of landfill will be the last option.
- 6.6.5 'Spot checks' may be made in relation to the completeness of any WTNs and any Hazardous Waste Consignment notes by the Client or their representatives.
- 6.6.6 If any problems are identified during the lifetime of the UK Onshore Scheme in relation to exceeding the expected OWMP waste stream volumes, failure to meet stated targets or issues relating to cost effective and legal transfer of waste materials then they will be escalated to the

Contracts Manager for further discussion on the best solution. This may trigger a review of the OWMP.

#### Review of this OWMP – Monitoring Records

- 6.6.7 This OWMP will be reviewed at least once every six months during the lifetime of this project by the Contractor to ensure that targets are being achieved and that realistic solutions are provided for unplanned events or abnormal wastes. The OWMP will also be reviewed if there is any significant change in the project. These reviews will involve the completion and submission of a monitoring report to the Client (or their representative) in an agreed format.

#### Additional Duty of Care Checks

- 6.6.8 Waste loads will occasionally be followed by the Contractor to confirm that the waste is disposed of at the stated place of disposal, with any irregularities investigated immediately, and reported as an environmental incident. Action may involve termination of contract and/or notification to the EA.

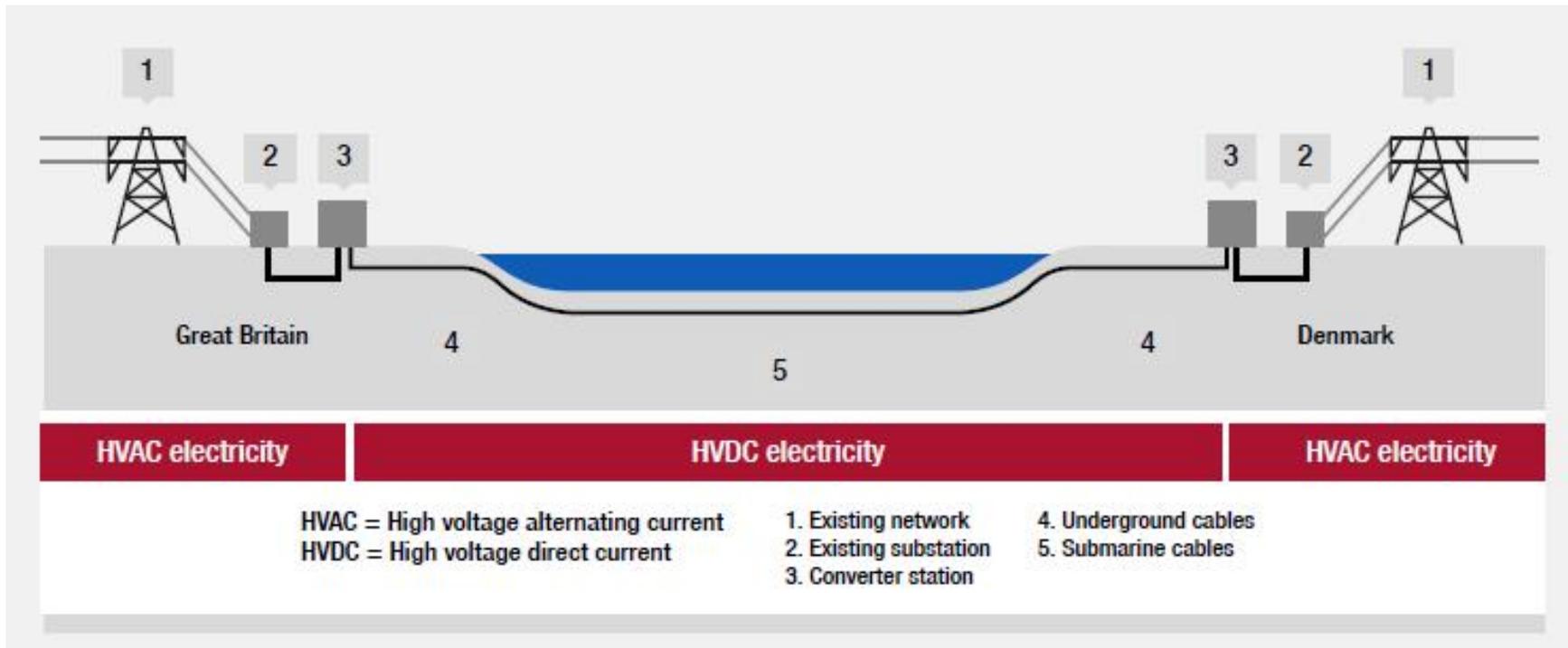
#### Site Inspections

- 6.6.9 The Site Manager or nominated deputy will undertake a daily inspection of the construction areas including all areas used for waste management. Any issues will be recorded in the daily log along with any corrective taken.

#### Closure Reporting

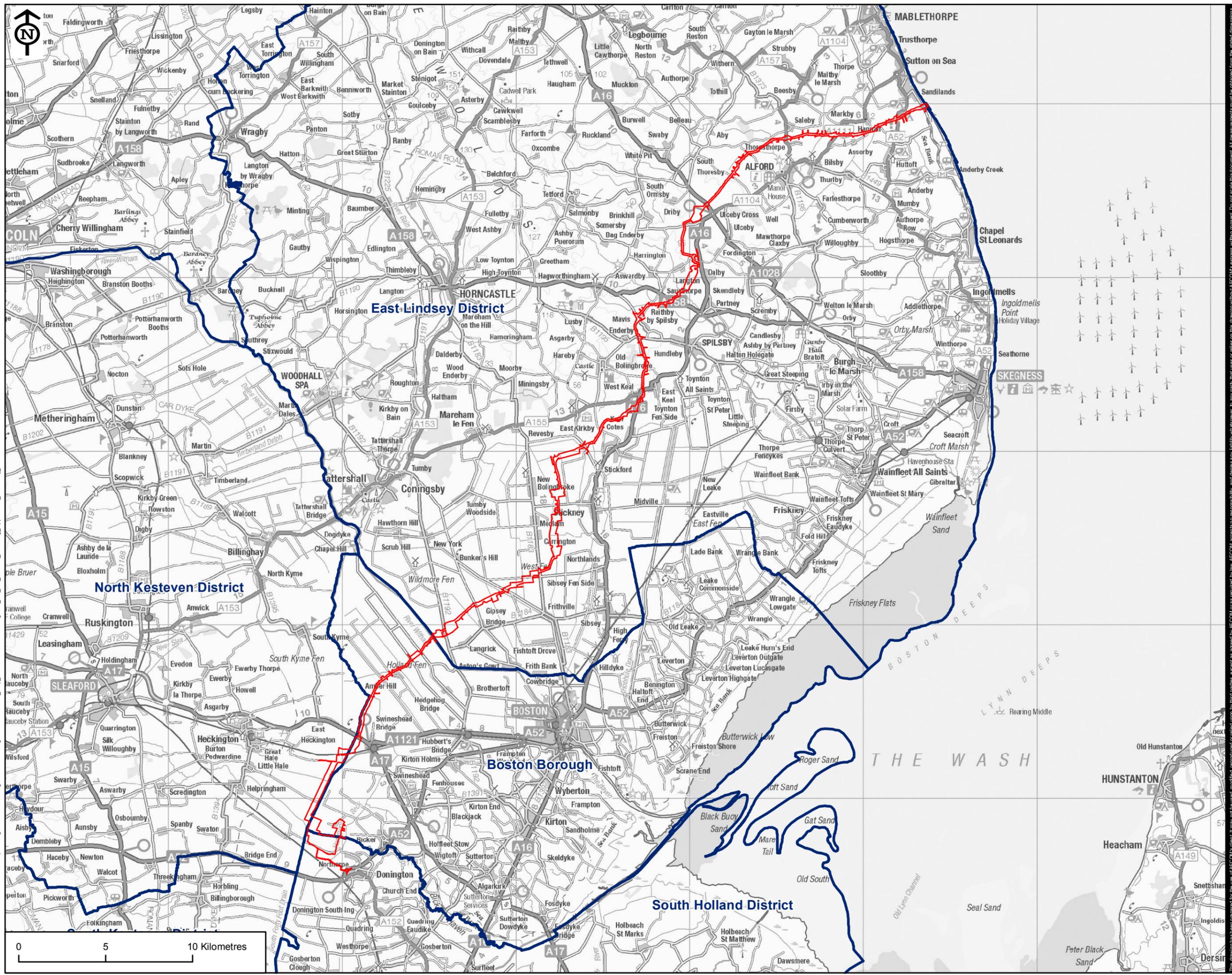
- 6.6.10 Within three months of the completion of works under a contract a Waste Management Closure Report will be submitted to the Client (or their representative) to demonstrate the effective implementation, management and monitoring of construction waste during the construction lifetime of the development.

## Appendix A Drawings



Schematic Overview of Viking Link

CONSULTANT: AECOM PRODUCED: LC CHECKED: LC APPROVED: DR  
 File name: P:\UK\NCL2-IE\Environmental\GIS Management\GIS Management\Map\_Document\ES Drawings\VL\_ES\_1\_3\_170808\_Planning\_Application\_Boundary\_v2.mxd



**LEGEND**

<span style="border: 1px solid red; display: inline-block; width: 15px; height: 10px;"></span>	Application Boundary
<span style="border: 2px solid blue; display: inline-block; width: 15px; height: 10px;"></span>	Local Planning Authority Administrative Boundary



**REVISION:**

REV.	DATE	DESCRIPTION
1	19/07/17	ORIGINAL ISSUE
2	08/08/17	COMMENTS ADDRESSED

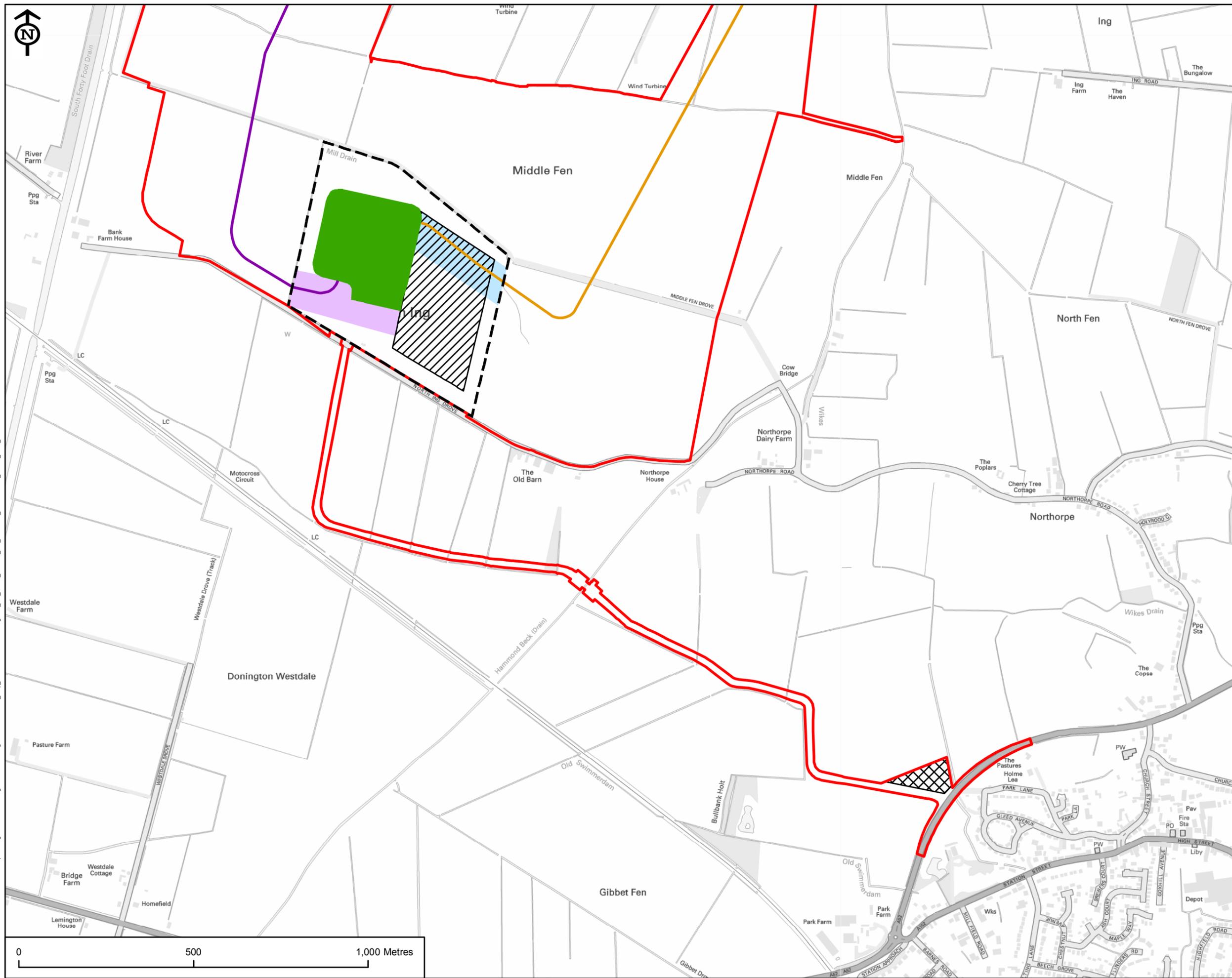
**FIGURE NO.**  
VL\_170808\_ES1.3

**FIGURE TITLE**  
FIGURE 1.3  
UK ONSHORE SCHEME:  
PLANNING APPLICATION  
BOUNDARY

**SHEET NUMBER**  
1 of 1

**NOTES**

**Date:** 08/08/17  
**Scale at A3:** 1:200,000



- LEGEND**
- Application Boundary
  - Proposed Converter Station Site
  - Indicative AC Cable Alignment
  - Indicative DC Cable Alignment
  - AC Cable Temporary Construction Area
  - DC Cable Temporary Construction Area
  - CS Temporary Construction Area
  - Temporary Construction Facilities
  - Temporary Working Area (for Permanent Access Road Construction)



**REVISION:**

REV.	DATE	DESCRIPTION
1	19/07/17	ORIGINAL ISSUE
2	09/08/17	COMMENTS ADDRESSED

**FIGURE NO.**  
VL\_170809\_ES17.15

**FIGURE TITLE**  
FIGURE 17.15  
PROPOSED CONVERTER  
STATION: INDICATIVE  
CONSTRUCTION PHASE  
PLAN  
**SHEET NUMBER**  
1 of 1

**NOTES**

**Date:** 09/08/17 **Scale at A3:** 1:10,000

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- LEGEND**
- Application Boundary
  - Proposed Converter Station Site
  - Indicative AC Cable Alignment
  - Indicative DC Cable Alignment
  - Building and outdoor electrical equipment zone - Sub-zone A
  - Building and outdoor electrical equipment zone - Sub-zone B
  - Attenuation zone
  - Reinstated zone
  - Additional hardstanding zone
  - Landscape planting zone
  - Landscape planting zone - Cable entry and exit point
  - Perimeter road zone
  - Security zone



**REVISION:**

REV.	DATE	DESCRIPTION
1	19/07/17	ORIGINAL ISSUE
2	09/08/17	COMMENTS ADDRESSED

**FIGURE NO.**  
VL\_170809\_ES17.9

**FIGURE TITLE**  
FIGURE 17.9  
PROPOSED CONVERTER STATION:  
BASE DESIGN LAYOUT

**SHEET NUMBER**  
1 of 1

**NOTES**



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## Appendix C Waste Management Routes







## CONTACT US

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If you, or someone you know, would like information in Braille, audio, large print or another language, please call us on the freephone number above.