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## CONTENTS

<b>16.0 WASTE MANAGEMENT</b> .....	<b>16-1</b>
16.1 Introduction .....	16-1
16.2 Legislation and Planning Policy Context .....	16-1
16.3 Assessment Methodology and Significance Criteria .....	16-3
16.4 Baseline Conditions .....	16-8
16.5 Development Design and Impact Avoidance .....	16-10
16.6 Likely Impacts and Effects .....	16-12
16.7 Mitigation and Enhancement Measures.....	16-15
16.8 Limitations or Difficulties .....	16-15
16.9 Residual Effects and Conclusions.....	16-15
16.10 References.....	16-15

## TABLES AND PLATES

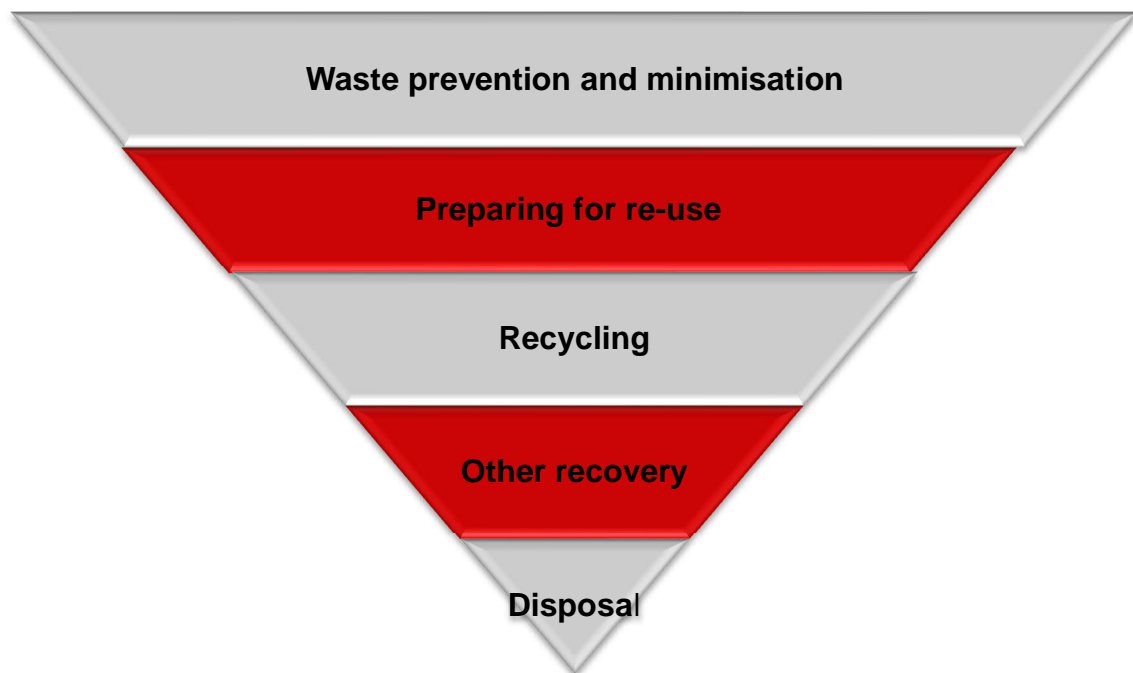
<b>Plate 16.1: Waste hierarchy</b> .....	<b>16-1</b>
<b>Table 16.1: Waste benchmarks</b> .....	<b>16-4</b>
<b>Table 16.3: Yorkshire and the Humber landfill inputs 2018 (000 tonnes)</b> .....	<b>16-9</b>
<b>Table 16.4: Yorkshire and the Humber landfill capacity 2018 (000 cubic metres)</b> 16-9	
<b>Table 16.5: Estimated annual waste arisings in Yorkshire and the Humber ....</b>	<b>16-10</b>
<b>Table 16.6: Estimated construction waste types and tonnages for the Proposed Development</b> .....	<b>16-12</b>

## 16.0 WASTE MANAGEMENT

### 16.1 Introduction

- 16.1.1 This chapter of the Environmental Statement (ES) addresses the potential effects of the Proposed Development on waste management.
- 16.1.2 Waste is defined as per the Waste Framework Directive (2008/98/EC) (Official Journal of the European Union, 2008) (WFD) as "*any substance or object which the holder discards or intends or is required to discard*" and this definition is transposed into law in England and Wales by The Waste (England and Wales) Regulations 2011.
- 16.1.3 During construction, operation (including maintenance) and decommissioning of the Proposed Development, the aim is to prioritise waste prevention, followed by re-use, recycling, recovery and lastly disposal to landfill as per the internationally recognised waste hierarchy (see Plate 16.1).

**Plate 16.1: Waste hierarchy**



- 16.1.4 There is potential for quantities of waste to be generated during the construction of the Proposed Development, such as excess spoil from excavations. Waste will also be generated during the operation and maintenance of the Proposed Development, predominantly from combustion and flue gas treatment.

### 16.2 Legislation and Planning Policy Context

- 16.2.1 Relevant policies, legislation and guidance have been considered as part of the waste assessment, which have informed the identification of receptors and resources and their sensitivity, the assessment methodology, the potential for significant environmental effects, and required mitigation.

## National Legislation and Policy

### *Overarching National Policy Statement for Energy (EN-1)*

16.2.2 The Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change, 2011a) states that, in determining a Development Consent Order application for energy infrastructure, the decision-maker should:

*“consider the extent to which the applicant has proposed an effective system for managing hazardous and non-hazardous waste arising from the construction, operation and decommissioning of the proposed development. It should be satisfied that:*

- *any such waste will be properly managed, both on-site and off-site;*
- *the waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, or is likely to be, available. Such waste arisings should not have an adverse effect on the capacity of existing waste management facilities to deal with other waste arisings in the area; and*
- *adequate steps have been taken to minimise the volume of waste arisings, and of the volume of waste arisings sent to disposal, except where that is the best overall environmental outcome.”*

### *National Policy Statement for Renewable Energy Infrastructure (EN-3)*

16.2.3 The National Policy Statement for Renewable Energy Infrastructure (EN-3) (Department for Energy and Climate Change, 2011b) states that, with respect to waste generated by biomass or waste energy generation projects:

- *“The assessment should include the production and disposal of residues as part of the ES. Any proposals for recovery of ash and mitigation measures should be described”; and*
- *“Applicants should set out the consideration they have given to the existence of accessible capacity in waste management sites for dealing with residues for the planned life of the power station.”*

### *The Waste Management Plan for England (2013)*

16.2.4 The Waste Management Plan for England (Department for Environment, Food and Rural Affairs (Defra), 2013) fulfils the WFD Article 28 mandatory requirements, and other required content as set out in Schedule 1 to the Waste (England and Wales) Regulations 2011. The Waste Management Plan is a high level document, which outlines waste that is generated and how those materials are managed. The Waste Management Plan provides an analysis of current waste management practices in England, and evaluates implementation of the objectives and provisions of the revised WFD. In terms of demolition and construction waste, the plan details how the United Kingdom is committed to meeting its target under the WFD of recovering at least 70% by weight, of construction and demolition waste by 2020.

*The National Planning Policy for Waste (2014)*

16.2.5 The National Planning Policy for Waste (Department for Communities and Local Government, 2014) provides the planning framework to enable Local Authorities to put forward, through local waste management plans, strategies that identify sites and areas suitable for new or enhanced facilities to meet the waste management needs of their areas. Information is also included concerning non-waste developments, including any development whose end function is not directly related to waste. Waste developments include landfills, waste disposal, waste treatment, waste recycling plants, and Household Waste Recycling Centres.

*Our Waste, Our Resources: a Strategy for England (2018)*

16.2.6 The strategy will help the government to meet that commitment and “sets out how we will preserve our stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy. At the same time we will minimise the damage caused to our natural environment by reducing and managing waste safely and carefully, and by tackling waste crime.” The strategy combines actions to be taken now and commitments for the coming years.

Local Policy

16.2.7 The waste disposal authority for the Site is North East Lincolnshire Council. The Council’s Local Plan 2013 to 2032 (adopted 2018) includes policies relating to waste management. Policy 47 includes the statement that:

*“The Council will also seek to secure the recycling of Construction, Demolition and Excavation (CD&E) waste at the locations where waste is produced, including the temporary provision for recovery, separation and where appropriate processing of on-site materials.”*

16.2.8 The above mentioned plans and policies have informed the assessment methodology.

16.2.9 The assessment has also taken account of the key legislation relevant to waste management for the Proposed Development, including, but not limited to:

- The Waste (England and Wales) Regulations 2011;
- The Environmental Permitting (England and Wales) Regulations 2016;
- Environmental Protection Act 1990;
- Hazardous Waste (England and Wales) Regulations 2005; and
- Waste Framework Directive 2008/98/EC.

### **16.3 Assessment Methodology and Significance Criteria**

Assessment Scope

16.3.1 Waste management has been scoped into the Environmental Impact Assessment (EIA) primarily because (as described in Chapter 5: Construction Programme and Management) there may be a requirement to cut and fill the top layer of ground within the Main Development Area to improve geotechnical

conditions for construction, which could generate a large volume (approximately 160,000 m<sup>3</sup>) of surplus excavation material.

16.3.2 The Study Area for the waste assessment has been defined as the Yorkshire and Humber region.

*Construction*

16.3.3 Waste will be generated during construction. Excluding potential surplus excavation material, the majority of other construction waste types will be generated in small quantities (see Table 16.6), and a large proportion of these would be recycled, with the remainder disposed off-site by a licensed waste contractor.

16.3.4 The quantities of waste generated during construction of the Proposed Development have been estimated using the Smartwaste waste benchmark data (Building Research Establishment, 2012) for industrial buildings, which are available based on either construction spend, or building floor area (see Table 16.1 below).

**Table 16.1: Waste benchmarks**

	<b>AVERAGE M<sup>3</sup>/ 100 M<sup>2</sup></b>	<b>AVERAGE M<sup>3</sup>/ £100K</b>
Industrial buildings	13.0	10.8

16.3.5 The benchmark value for m<sup>3</sup> of waste per 100 m<sup>2</sup> of floor area has been used for this assessment and is considered to represent a realistic worst-case estimate. Using the benchmark value based on project cost would give a misleadingly high estimate, since a large proportion of the capital cost of the project relates to the power generation and associated plant, which is manufactured off Site and is unlikely to generate significant quantities of on Site construction waste.

16.3.6 Surplus excavated materials may arise for example if geotechnical ground improvement works are identified as being necessary by the appointed construction contractor following ground investigation and detailed design. This could require the removal of c. 2 m depth of ground from the Main Development Area to be replaced with engineering fill material.

16.3.7 This assessment considers the cut and fill of the entire Main Development Area, as a worst case, but in reality it is not expected that the entire Main Development Area would be subject to this geotechnical treatment.

*Operation*

16.3.8 As described in Chapter 4: The Proposed Development, operational waste will predominantly comprise combustion residues (bottom ash) and flue gas treatment (FGT) residues, which will be managed in accordance with the relevant environmental regulations using licensed waste contractors. The estimated volumes and waste management methods for these operational wastes are considered in this assessment.

16.3.9 Aside from foul water from domestic facilities (kitchens, toilets etc) at the Proposed Development, under normal plant operation liquid waste volumes will

be minimal and will be returned to the operational process for re-use. Any excess liquid effluent would be stored on site and tankered off by a suitable contractor, or discharged to Anglian Water foul sewer under a trade effluent consent. Liquid effluent is therefore not considered further in this chapter.

16.3.10 Waste from maintenance activities would be of significantly lower volumes than those generated from normal plant operation and therefore are not assessed further in this chapter.

#### *Decommissioning*

16.3.11 Waste generated during decommissioning and demolition of the Proposed Development has been scoped out of this assessment because:

- there is no information on waste policies, regional waste arisings or facilities that may be in place when the Proposed Development is decommissioned (2053 or later), hence it is not possible to define a baseline;
- any future decommissioning contractor will be required to comply with relevant legislation and policy at that time;
- the majority of materials generated during future decommissioning will comprise concrete and steel, both of which are likely to be recycled rather than disposed; and
- there is no certainty on the timing or method of decommissioning, hence it is not possible to determine the availability of waste management facilities or the quantities or types of waste that may be generated.

#### Assessment Scenarios and Parameters

16.3.12 As described in Chapter 4: The Proposed Development and Chapter 5: Construction Programme and Management, three possible construction programme scenarios have been identified for the Proposed Development. As there is no difference in the scale and duration of construction for all three scenarios, the total waste that would be generated by any construction scenario would be the same. However it is noted that in Scenario 1 (the most likely scenario as described in Chapter 5: Construction Programme and Management, whereby the additional elements required for the Proposed Development are constructed part way through the construction of the Consented Development) the Proposed Development would not generate any significant additional waste beyond that already generated by the construction of the Consented Development. This is assessed in paragraphs 16.6.12 to 16.6.19.

16.3.13 This Chapter present a worst case scenario in terms of waste impacts for the entire Proposed Development.

16.3.14 For the operational scenario, the quantities of waste presented in the assessment are based on the maximum parameters (Rochdale envelope) for the Proposed Development, which represents the worst case for the operational assessment.



### Consultation

- 16.3.15 Comments in relation to the waste management assessment within the EIA Scoping Opinion received from the Planning Inspectorate (PINS) on 2nd October 2019 have been reviewed.
- 16.3.16 The comments state *“the assessment in the ES must be structured in the way described in Section 6.3 of the Scoping Report. The study area and impacts assessed must be clearly explained and justified.”*
- 16.3.17 Public Health England’s comments on the EIA scope dated 18<sup>th</sup> September 2019 (included within Annex 2 of the EIA Scoping Opinion) are also noted:
- “The applicant should demonstrate compliance with the waste hierarchy (e.g. with respect to re-use, recycling or recovery and disposal). For wastes arising from the development the ES should assess:*
- *the implications and wider environmental and public health impacts of different waste disposal options;*
  - *disposal route(s) and transport method(s) and how potential impacts on public health will be mitigated;*
  - *if the development includes wastes delivered to the installation; and*
  - *consider issues associated with waste delivery and acceptance procedures (including delivery of prohibited wastes) and should assess potential off-site impacts and describe their mitigation.”*
- 16.3.18 The consultation response by NELC to PINS explained that the EIA Scoping Report captured the relevant information requested by NELC in the scoping opinion in respect of the Consented Development and that NELC have no further comments.
- 16.3.19 There were no specific comments relating to the waste management assessment received through consultation on the Preliminary Environmental Information (PEI) Report.
- 16.3.20 As set out in Section 16.5 below, all wastes arising from the Proposed Development will be managed appropriately in accordance with the waste hierarchy, relevant legislation and best practice. Waste disposal sites are regulated by Environmental Permits, and their operation is outside the scope of this assessment.

### Significance of Effects

- 16.3.21 Waste management effects and their significance during construction have been assessed by:
- establishing the baseline for inert landfill capacity in Yorkshire and the Humber planning region;
  - estimating the likely quantity of surplus excavated materials that is likely to be generated by the Proposed Development; and

- comparing the quantity of surplus excavated materials from the Proposed Development to the baseline inert landfill capacity and assessing the likely impact on that capacity and ability of these sites to accept the waste.

16.3.22 Waste management effects and their significance during operation have been assessed by:

- establishing the current annual baseline for inert waste arisings in Yorkshire and the Humber planning region, and for hazardous waste arisings nationally (recognising that non-hazardous wastes are typically managed regionally, whereas hazardous wastes are often managed nationally, using a much smaller network of facilities);
- estimating the likely quantity of bottom ash and FGT residues that will be generated by the Proposed Development; and
- comparing the quantity of operational waste from the Proposed Development to the current annual baseline arisings of these wastes.

16.3.23 In the absence of other guidance on assessing the effects of developments on waste management arisings, the significance criteria used within this assessment have been derived from previous AECOM experience and on the basis of professional judgment.

16.3.24 The significance of waste management effects has been determined using the criteria set out in Table 16.2. This methodology for classification of effects is different to the standard methodology set out in Chapter 2: Assessment Methodology, but given the nature of this assessment (whereby receptor sensitivity does not form part of the assessment), this is considered to be appropriate.

**Table 16.2: Waste management assessment criteria and classification of effects**

EFFECT	CRITERIA FOR EFFECTS OF WASTE GENERATED (CONSTRUCTION)	CRITERIA FOR EFFECTS OF WASTE GENERATED (OPERATION)	SIGNIFICANCE
Negligible	Negligible increase in waste arisings less than 0.1% of current available disposal capacity; causing insignificant burden to the local and regional waste management infrastructure.	Negligible increase in waste arisings less than 0.1% of current annual waste arisings in the region (for inert waste) and nationally (for hazardous waste).	Not significant
Minor	Minor increase in waste arisings between 0.1% and 1.9% of current available disposal	Minor increase in waste arisings between 0.1% and 1.9% of current annual waste	Not significant



EFFECT	CRITERIA FOR EFFECTS OF WASTE GENERATED (CONSTRUCTION)	CRITERIA FOR EFFECTS OF WASTE GENERATED (OPERATION)	SIGNIFICANCE
	capacity; causing a minor burden to the local and regional waste management infrastructure.	arisings in the region (for inert waste) and nationally (for hazardous waste).	
Moderate	Moderate increase in waste arisings between 2% and 5% of current available disposal capacity; potentially causing moderate burden to the local and regional waste management infrastructure.	Moderate increase in waste arisings between 2% and 5% of current annual waste arisings in the region (for inert waste) and nationally (for hazardous waste).	Significant
Major	Large increase in waste arisings greater than 5% of current available disposal capacity; potentially causing significant burden to the local and regional waste management infrastructure.	Large increase in waste arisings greater than 5% of current annual waste arisings in the region (for inert waste) and nationally (for hazardous waste).	Significant

16.3.25 In line with the assessment methodology outlined in Chapter 2: Assessment Methodology, only moderate and major effects are considered to be significant for the purposes of the EIA.

## 16.4 Baseline Conditions

### Existing Baseline

16.4.1 The Environment Agency's Waste Management Information 2018 (published in 2019) includes the following information about waste sent to landfills in 2018 and remaining landfill capacity in the former Humberside area, and in the wider Yorkshire and the Humber region, as shown in Table 16.3 and Table 16.4.

**Table 16.3: Yorkshire and the Humber landfill inputs 2018 (000 tonnes)**

LANDFILL TYPE	SUB-REGION				YORKSHIRE AND THE HUMBER
	FORMER HUMBER -SIDE	NORTH YORK-SHIRE	SOUTH YORK-SHIRE	WEST YORK-SHIRE	
Hazardous Merchant	25	-	-	71	96
Hazardous Restricted	-	-	-	-	-
Non Hazardous with SNRHW cell	8	-	-	536	543
Non Hazardous	857	241	254	936	2,288
Non Hazardous Restricted	18	256	12	-	285
Inert	428	201	80	251	959
<b>Total</b>	<b>1,334</b>	<b>699</b>	<b>345</b>	<b>1,794</b>	<b>4,171</b>

\*SNRHW –Stable Non-Reactive Hazardous Waste

**Table 16.4: Yorkshire and the Humber landfill capacity 2018 (000 cubic metres)**

LANDFILL TYPE	SUB-REGION				YORKSHIRE AND THE HUMBER
	FORMER HUMBER -SIDE	NORTH YORK-SHIRE	SOUTH YORK-SHIRE	WEST YORK-SHIRE	
Hazardous merchant	837	-	-	1,815	2,652
Hazardous Restricted	-	-	-	-	-
Non Hazardous with SNRHW cell*	1,243	-	-	-	1,243
Non Hazardous	26,043	17,003	3,926	6,822	53,793
Non Hazardous Restricted	-	-	-	-	-
Inert	2,992	986	6,491	2,970	13,439
<b>Total</b>	<b>31,115</b>	<b>17,988</b>	<b>10,417</b>	<b>11,607</b>	<b>71,128</b>

16.4.2 Data on regional waste generation (see Table 16.5) is available in the 'Yorkshire and Humber Waste Position Statement February 2016' which was produced jointly by all seventeen Waste Planning Authorities in the Yorkshire and Humber area to help ensure appropriate coordination in planning for waste.

**Table 16.5: Estimated annual waste arisings in Yorkshire and the Humber**

<b>WASTE STREAM</b>	<b>ESTIMATED ARISINGS (000 TONNES)</b>
Local Authority Collected Waste (LACW)	2,490
Commercial and Industrial waste (C&I)	6,944
C&I minus power and utilities	4,880
Construction, demolition and excavation waste (CD&E)	10,497
Hazardous waste	522

16.4.3 According to the ‘Digest of Waste and Resource Statistics – 2018 Edition’ (Defra, 2018), the UK generated 4.3 million tonnes of hazardous waste in 2014, the latest date for which data is presented.

Future Baseline

16.4.4 The Environment Agency does not publish information on future landfill capacity and it is therefore not possible to accurately establish a future baseline. Whilst existing capacity will be utilised, new capacity is expected to be developed in order to accommodate future flows of waste requiring disposal. For the purposes of this assessment, it is therefore assumed that the future baseline landfill capacity will be similar to the current baseline capacity. Similarly, there is insufficient information to estimate future levels of waste arisings in the region, and hence the future annual baseline waste arisings are assumed to be similar to the current baseline arisings.

**16.5 Development Design and Impact Avoidance**

Construction

16.5.1 Waste arisings will be prevented and designed out where practicable through working with suppliers to minimise wastage in materials and packaging.

16.5.2 Contractors will be required to adopt good practice in construction waste management which will reduce the quantity of waste generated. The following approaches will be implemented, where practicable, in order to minimise the quantities of waste requiring disposal:

- agreements with material suppliers to reduce the amount of packaging or to participate in a packaging take-back scheme;
- implementation of a ‘just-in-time’ material delivery system to avoid materials being stockpiled, which increases the risk of their damage and disposal as waste;
- attention to material quantity requirements to avoid over-ordering and generation of waste materials;

- re-use of materials wherever feasible, e.g. re-use of excavated soil for landscaping or ramp embankments. Concrete will be either taken off Site for crushing and re-use, or crushed and re-used on Site;
- segregation of waste at source where practical; and
- re-use and recycling of materials off Site where re-use on Site is not practical (e.g. through use of an off Site waste segregation facility and re-sale for direct re-use or re-processing).

16.5.3 The following waste management measures will be implemented in order to minimise the likelihood of any localised impacts of waste on the surrounding environment:

- damping down of surfaces during spells of dry weather and brushing/ water spraying of heavily used hard surfaces/ access points across the Site as required;
- off Site prefabrication, where practical, including the use of prefabricated structural elements, cladding units, toilets, mechanical and electrical risers and packaged plant rooms;
- open burning of waste or unwanted materials will not be permitted on Site;
- all hazardous materials including fuels, chemicals, cleaning agents, solvents and solvent containing products to be properly stored in sealed containers at the end of each day prior to storage in appropriately protected and bunded storage areas;
- any waste effluent will be tested and where necessary, disposed of at the correctly licensed facility by a licensed specialist contractor(s); and
- materials requiring removal from the Site will be transported using licensed carriers and records will be kept detailing the types and quantities of waste moved, and the destinations of this waste, in accordance with the relevant regulations.

16.5.4 An Outline Construction Environmental Management Plan (CEMP) has been prepared and is presented within Appendix 5A in ES Volume III (Document Ref. 6.4). This will be finalised by the contractor prior to the start of construction. The CEMP will set out how waste will be managed during construction, and opportunities to re-use and recycle waste will be explored in accordance with the waste hierarchy.

16.5.5 The option to reduce the excavation depth of the bunker and use ramps on embankments for access into the fuel reception hall would reduce the volume of spoil potentially requiring disposal off Site.

#### Operation

16.5.6 The Environmental Management System that will be developed and maintained for the operational Proposed Development as required by the Environmental Permit will include procedures for the management of waste in accordance with relevant legislation.

## 16.6 Likely Impacts and Effects

### The Proposed Development

16.6.1 The impacts and effects of the Proposed Development are described below.

#### **Construction**

16.6.2 Based on the indicative concept layout, the total footprint for all structures is anticipated to be around 26,600 m<sup>2</sup>.

16.6.3 Using this footprint area and the benchmark data for waste generation (see Table 16.1), the total estimated waste arisings are 3,458 m<sup>3</sup>, equivalent to 5,099 tonnes.

16.6.4 It is not possible at this stage to accurately estimate the quantities of different wastes that will be generated. Provisional estimates have been made based on average composition data for construction waste from new-build industrial buildings published by WRAP (WRAP, 2009), and are shown in Table 16.6 below. These estimates relate to the quantities of waste generated, and not the quantities of waste requiring landfill disposal. It is expected that a significant proportion of the waste may be suitable for re-use or recycling.

**Table 16.6: Estimated construction waste types and tonnages for the Proposed Development**

WASTE TYPE	AVERAGE PERCENTAGE COMPOSITION	ESTIMATED TONNES
Bricks	10%	488
Tiles and ceramics	0%	4
Concrete	44%	2,253
Inert	26%	1,329
Insulation	0%	19
Metals	3%	131
Packaging	2%	92
Gypsum	1%	51
Binders	0%	2
Plastics	0%	15
Timber	2%	107
Floor coverings (soft)	0%	1
Electrical and electronic equipment	0%	0
Furniture	0%	1
Canteen/ office/ ad hoc	1%	29
Liquids	0%	-
Oils	0%	-
Asphalt and tar	2%	113

Hazardous	1%	36
Other	0%	-
Mixed	8%	425
<b>TOTAL</b>	<b>100%</b>	<b>5,099</b>

- 16.6.5 A Site specific ground investigation has been carried out. For the purposes of the EIA and the worst case scenario assessment undertaken, it is assumed that approximately 2 m depth of soil across the Main Development Area will be removed and replaced with engineering fill, to improve geotechnical conditions at the Site. Based on the topographical data available it is estimated this activity will generate approximately 160,000 m<sup>3</sup> of surplus excavated material that will require exporting from Site. In addition, an estimated 3,458 m<sup>3</sup> of other construction waste may be generated during the construction phase, as described above.
- 16.6.6 Although it may be possible to re-use some of this material on Site, or to find beneficial off Site uses, the worst-case assumption is that this material will be disposed of to a landfill site.
- 16.6.7 Environment Agency data presented in Table 16.4 shows that there is approximately 13.5 million m<sup>3</sup> of inert waste landfill capacity in the Yorkshire and the Humber region. The surplus excavated material and other construction waste generated by the site comprises approximately 1.2% of this available capacity and is therefore considered to be a minor adverse effect, and not significant.

**Operation**

- 16.6.8 The following quantities of operational process waste are anticipated:
- up to 179,000 tonnes per annum of bottom ash, which will either be landfilled or recycled as a secondary aggregate; and
  - approximately 20,600 tonnes per annum of FGT residues, which will be disposed of as hazardous waste (due to their alkaline nature).
- 16.6.9 Bottom ash from energy from waste facilities is widely recycled in the UK, for use as a secondary aggregate. However, as a worst case, it is assumed that bottom ash may be disposed of to landfill.
- 16.6.10 Since bottom ash more closely resembles construction and demolition waste than commercial/ industrial waste (being an inert material), the arisings of bottom ash from the Proposed Development are compared to the annual arisings of construction, demolition and excavation waste in Yorkshire and the Humber, which is approximately 10.5 million tonnes per year (see Table 16.5). The estimated annual quantity of bottom ash generated will therefore represent approximately 1.7% of Yorkshire and the Humber's annual construction, demolition and excavation waste arisings, and hence is assessed as a minor adverse effect, and not significant.
- 16.6.11 It is assumed as a worst case for the purposes of assessment that FGT residues will be disposed of to a hazardous waste landfill (although it is possible



to treat the FGT residues then re-use the material as a secondary aggregate). The estimated annual quantity of FGT residues generated would represent approximately 0.48% of the UK's annual hazardous waste arisings (see Table 16.5), and hence is assessed as a minor adverse effect, and not significant.

#### Comparison of Proposed Development and Consented Development

16.6.12 The impacts and effects of the Proposed Development compared to the impacts and effects of the Consented Development are described below.

##### **Construction**

16.6.13 The worst case assumption that the whole Main Development Area may require 2 m cut and fill for geotechnical purposes applies to both the Consented Development and the Proposed Development. The overall scale and nature of construction is also the same for both the Consented Development and the Proposed Development. The Proposed Development would have no additional significant construction waste impacts compared to the Consented Development.

16.6.14 The same methods for managing waste during construction (as set out in Section 16.5 above) would be applied for either the Consented Development or the Proposed Development.

16.6.15 The percentage (%) contribution of waste from the Proposed Development to the total regional waste arisings of around 13.5 million m<sup>3</sup> of inert waste landfill capacity in the Yorkshire and Humber region is estimated to be 1.2%. The % contribution reported for the Consented Development was 1.1% but this is only the result of updated baseline data used for the assessment (the actual volume and type of waste is the same). The Proposed Development would therefore have no additional construction waste effects compared to the Consented Development.

##### **Operation**

16.6.16 The quantities and types of operational waste would be the same for the Proposed Development as for the Consented Development.

16.6.17 The estimated annual quantity of bottom ash generated for the Proposed Development represents approximately 1.7% of Yorkshire and the Humber's annual construction, demolition and excavation waste arisings, which is the same as previously estimated for the Consented Development.

16.6.18 As such, the operation of the Proposed Development is predicted to have no additional operational waste effect compared to the operation of the Consented Development.

##### **Decommissioning**

16.6.19 The nature and scale of decommissioning activities would be the same for the Proposed Development as for the Consented Development, so the decommissioning of the Proposed Development is predicted to have no additional waste effect compared to the decommissioning of the Consented Development.

## 16.7 Mitigation and Enhancement Measures

### Construction

- 16.7.1 No further mitigation measures for waste management are required for the Proposed Development other than those identified in Section 16.5 Development Design and Impact Avoidance.
- 16.7.2 During the detailed design stage, the construction contractor will seek to minimise the quantities of surplus excavated materials where practicable.
- 16.7.3 Prior to and during construction, the contractor will seek to identify beneficial uses for surplus excavated material both within the Site and on other sites, and landfill disposal will be used only as the final option, in accordance with the waste hierarchy.

### Operation

- 16.7.4 The operator will explore opportunities for the beneficial re-use of bottom ash as a secondary aggregate to avoid landfill if possible, in accordance with the waste hierarchy.

## 16.8 Limitations or Difficulties

- 16.8.1 There are no significant limitations or difficulties associated with this topic. Appropriate estimates of construction waste arisings have been based on a worst case scenario as noted above. This use of the worst case scenario approach has enabled a robust assessment to be carried out.

## 16.9 Residual Effects and Conclusions

- 16.9.1 The potential need to dispose of surplus excavated material to an inert waste landfill has been assessed and no significant residual effects with respect to waste management are anticipated for the Proposed Development.
- 16.9.2 The potential impacts of managing operational waste have been assessed and no significant residual effects with respect to waste management are anticipated for the Proposed Development.
- 16.9.3 The Proposed Development would have no additional waste effects compared to the Consented Development.

## 16.10 References

Department for Communities and Local Government (2014) *National Planning Policy for Waste*

Department for Communities and Local Government (2018) *National Planning Policy Framework*

Department of Energy and Climate Change (2011a) *Overarching National Policy Statement for Energy (EN-1)*

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