

RWE Renewables UK Dogger Bank South (West) Limited

RWE Renewables UK Dogger Bank South (East) Limited

Dogger Bank South Offshore Wind Farms

Environmental Statement

Volume 7

Appendix 19-3 Onshore Waste Assessment

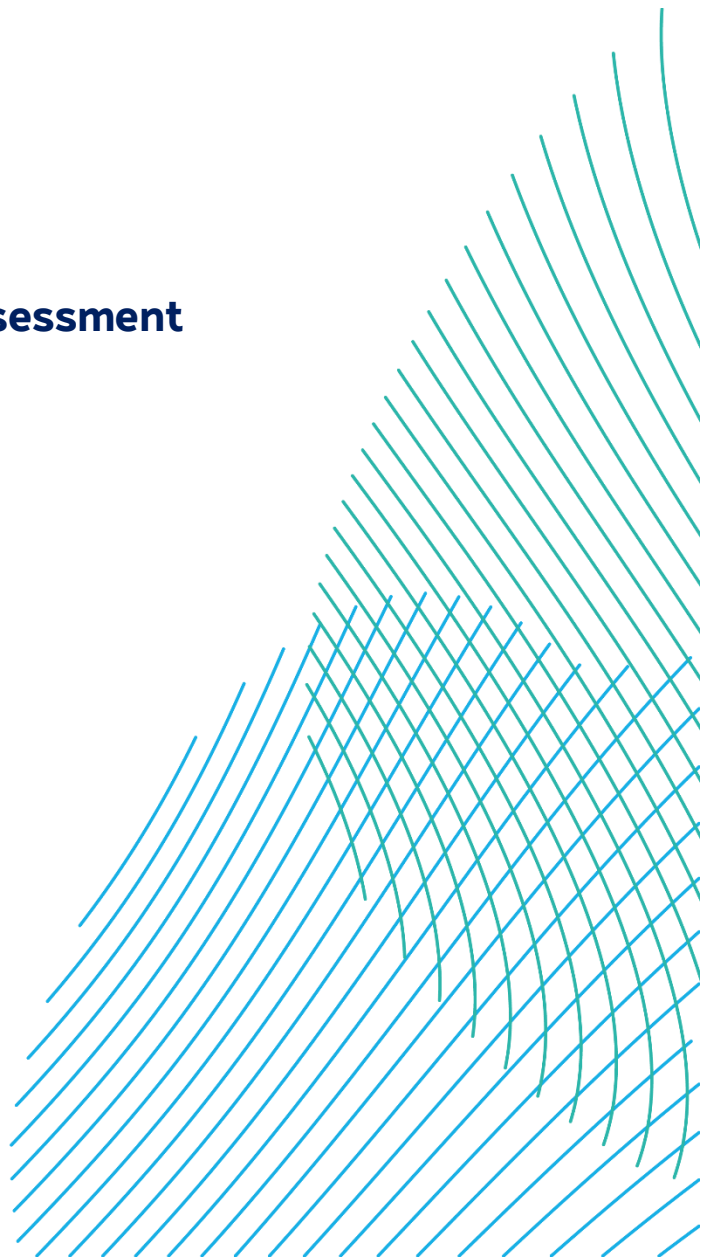
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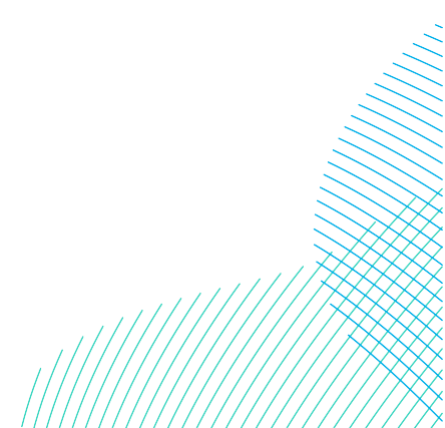
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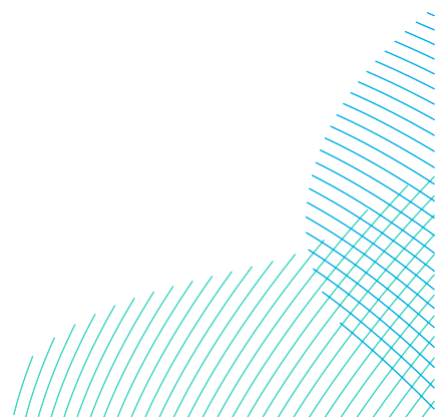


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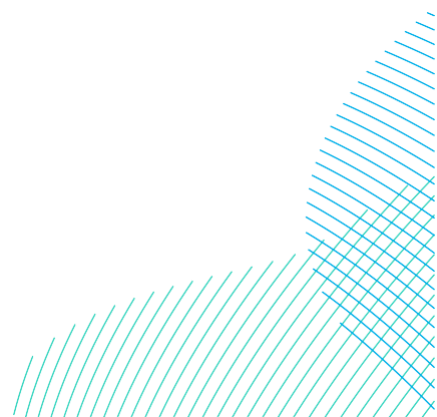
Glossary

Term	Definition
Jointing Bays	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Onshore Development Area	The Onshore Development Area for ES is the boundary within which all onshore infrastructure required for the Projects would be located including Landfall Zone, Onshore Export Cable Corridor, accesses, Temporary Construction Compounds and Onshore Converter Stations.
Onshore Substation Zone	Parcel of land within the Onshore Development Area where the Onshore Converter Station infrastructure (including the haul roads, Temporary Construction Compounds and associated cable routeing) would be located.
Onward Cable Connection	Area of 400kV HVAC onshore export cable from the Onshore Converter Stations to the Proposed Birkhill Wood National Grid Substation.
Temporary Construction Compound	An area set aside to facilitate construction of the Projects. These will be located adjacent to the Onshore Export Cable Corridor and within the Onshore Substation Zone, with access to the highway.
Transition Joint Bay (TJB)	The Transition Joint Bay (TJB) is an underground structure at the landfall that houses the joints between the Offshore Export Cables and the Onshore Export Cables.



Acronyms

Term	Definition
OCoCP	Outline Code of Construction Practice
DBS	Dogger Bank South
DESNZ	Department for Energy Security and Net Zero
EIA	Environmental Impact Assessment
EU	European Union
HDD	Horizontal Directional Drilling
IEMA	Institute of Environmental Management and Assessment
NPS	National Policy Statement
PPE	Personal Protective Equipment
OSWMP	Outline Site Waste Management Plan
TJB	Transition Joint Bay
WEEE	Waste Electrical and Electronic Equipment



19.3 Onshore Waste Assessment

19.3.1 Introduction

1. Royal HaskoningDHV has been commissioned by RWE Renewables UK Dogger Bank South (West) and RWE Renewables Dogger Bank South (East) (hereafter referred to as the Applicant) to carry out Onshore Waste Assessment to support the Environmental Impact Assessment (EIA). This report is Appendix 19-3 of the Environmental Statement (ES) for the onshore elements of the Dogger Bank South (DBS) East and DBS West Offshore Wind Farms (the Projects).
2. This report assesses the types of solid wastes and materials that are likely to be produced as part of the onshore development of the Projects during the construction, operation, and decommissioning phases. The report considers the proposed options for recycling, recovery or disposal of waste, and the capability and capacity of the existing local or regional waste management facilities to manage the quantities of waste estimated to be generated.
3. The Projects will consist of a number of offshore and onshore elements including offshore wind turbines and subsea array cables, Offshore / Onshore Export Cables and Onshore Converter Stations to accommodate connections to the transmission grid. A full description of the Projects is provided within **Volume 7, Chapter 5 Project Description (application ref: 7.5)**.

19.3.2 Approach to Waste Assessment

4. The approach to the waste assessment is to undertake the following:
 - Outline the main waste management legislative requirements and policy guidance relating to renewable energy projects;
 - Identify the primary sources of inert, non-hazardous and hazardous wastes that will be generated from the onshore construction, operation, and decommissioning of the Projects; and
 - Assess the implications of project-generated wastes on local/regional waste capacity.
5. This approach is in line with the methodology outlined in the Institute of Environmental Management and Assessment (IEMA) guide to Materials and Waste in EIA (IEMA, 2020), although no impact assessment has been undertaken.
6. Data on the local and regional waste management capacity have been identified from sources published by the Environment Agency.

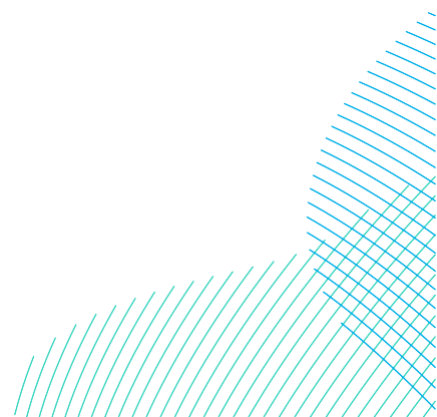
19.3.3 Waste Legislation and Policy

19.3.3.1 Context

7. UK waste legislation is underpinned by several international (e.g. European Union (EU)) agreements. In 2017, the UK government triggered article 50 of the Treaty of the European Union with the UK formally withdrawing from the EU on 31st January 2020.
8. Most EU waste management law was implemented into UK legislation by way of statutory instruments. This means that the relevant legislation has not been automatically or immediately affected by the UK's exit from the EU as the legislation will remain in place in the UK.

19.3.3.2 European Union and National Legislation

9. The European Revised Waste Framework Directive (2008/98/EC) was amended in May 2018 and sets the framework for UK Waste Policy. The Waste (Circular Economy) (Amendment) Regulations 2020 made changes to UK legislation to transpose the revised Waste Framework Directive into English and Welsh legislation.
10. The Waste (England and Wales) Regulations 2011 place a duty on waste producers and all handlers of waste to manage waste in accordance with a hierarchy of options where this achieves the best overall environmental outcome (Defra, 2018a).
11. The following waste strategy and plans detail the Governments approach to managing wastes in England:
 - Our Waste, Our Resources: A Strategy for England (Defra, 2018b); and
 - Waste Prevention Programme for England: Maximising Resources, Minimising Waste (Defra, 2023).

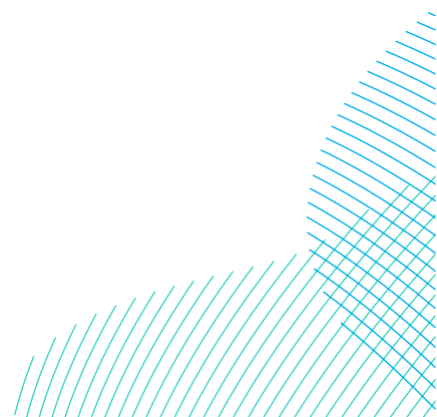


19.3.4 National Planning Policy

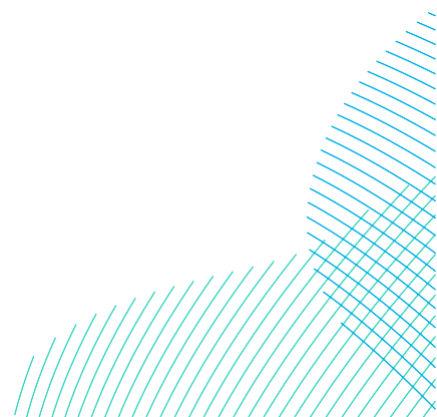
12. The policy framework for examining and determining applications for Nationally Significant Infrastructure Projects is provided by National Policy Statements (NPSs) issued by the Department for Energy Security and Net Zero (DESNZ).
13. Those relevant to the Projects are:
 - Overarching NPS for Energy (EN-1) (DESNZ, 2023a);
 - NPS for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b); and
 - NPS for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c).
14. The specific assessment requirements for waste are detailed in EN-1 and are summarised in **Table 19-1** below. The supporting documents EN-3 and EN-5 do not have detailed requirements for waste management.

Table 19-1 Summary of NPS requirements relating to waste

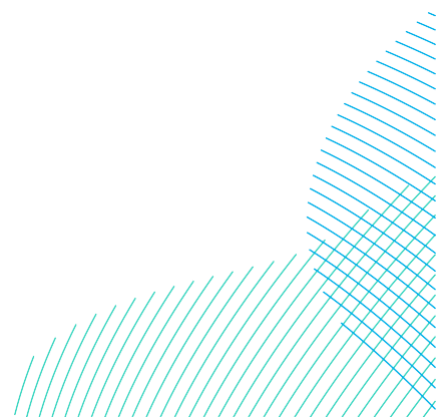
NPS EN-1 Requirement	Comment
<p>5.15.2 Sustainable waste management is implemented through the waste hierarchy, which sets out the priorities that must be applied when managing waste. These are a (in order):</p> <ul style="list-style-type: none"> • prevention • preparing for reuse • recycling • other recovery, including energy recovery • disposal 	<p>See approach and proposed targets for recycling set out in the Outline Site Waste Management Plan (OSWMP) Appendix E of the Outline Code of Construction Practice (OCoCP) (Volume 8, application ref: 8.9).</p>
<p>5.15.3 Disposal of waste should only be considered where other waste management options are not available or where it is the best overall environmental outcome.</p>	<p>The waste hierarchy would be implemented, as described in the OSWMP, Appendix E of the OCoCP (Volume 8, application ref: 8.9).</p>



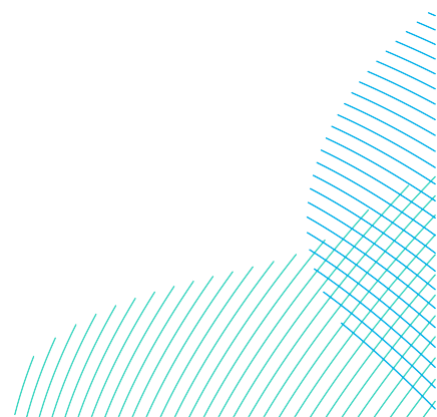
NPS EN-1 Requirement	Comment
<p>Applicant assessment</p> <p>5.15.8 The applicant should set out the arrangements that are proposed for managing any waste produced and prepare a report that sets out the sustainable management of waste and use of resources throughout any relevant demolition, excavation and construction activities.</p>	<p>Details provided in the OSWMP, Appendix E of the OCoCP (Volume 8 application ref: 8.9).</p>
<p>5.15.9 The arrangements described and a report setting out the sustainable management of waste and use of resources should include information on how re-use and recycling will be maximised in addition to the proposed waste recovery and disposal system for all waste generated by the development. They should also include an assessment of the impact of the waste arising from development on the capacity of waste management facilities to deal with other waste arising in the area for at least five years of operation.</p>	<p>Details provided in the OSWMP, Appendix E of the OCoCP (Volume 8, application ref: 8.9).</p> <p>There will be very small operational and maintenance waste arisings from the landfall, the Onshore Export Cable Corridor and the Onshore Substation Zone infrastructure and where produced will be managed as sustainably as practical in line with the location-specific Waste Management Plan.</p>
<p>5.15.10 The applicant is encouraged to refer to the 'Waste Prevention Programme for England' and 'Towards Zero Waste: Our Waste Strategy for Wales' and should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome.</p>	<p>The approach to preventing and minimising wastes and associated targets for recycling are detailed in the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9).</p>



NPS EN-1 Requirement	Comment
<p>5.15.12 The UK is committed to moving towards a more 'circular economy'. Where possible, applicants are encouraged to source materials from recycled or reused sources and use low carbon materials, sustainable sources and local suppliers. Construction best practices should be used to ensure that material is reused or recycled onsite where possible.</p>	<p>The Applicant will specify the use of low carbon materials in the engineering design, where practically possible. As detailed in Volume 7, Chapter 5 Project Description (application ref: 7.5).</p> <p>Construction best practices will be followed to avoid and minimise waste generation and where produced is managed sustainably. Details of best practices are contained in the OCoCP (Volume 8, application ref: 8.9).</p>
<p>5.15.13 Applicants are also encouraged to use construction best practices in relation to storing materials in an adequate and protected place on site to prevent waste, for example, from damage or vandalism. The use of Building Information Management tools (or similar) to record the materials used in construction can help to reduce waste in future decommissioning of facilities, by identifying materials that can be recycled or reused.</p>	<p>General waste management best practice principles are included in section 19.3.5.2.1.</p>
<p>Secretary of State decision making</p> <p>5.15.14 The Secretary of State 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.</p>	<p>Waste from the Projects will be classified as non-hazardous or hazardous in line with the expected wastes that will be generated as set out in section 19.3.5.1 and detailed in OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9).</p>



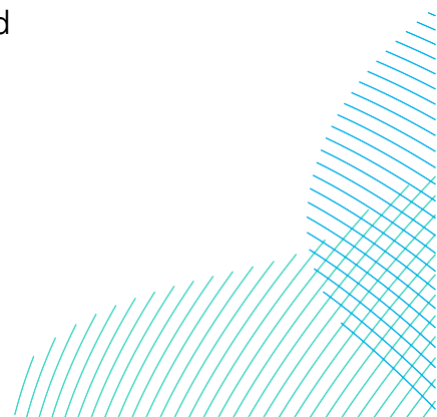
NPS EN-1 Requirement	Comment
<p>5.15.15 The Secretary of State should be satisfied that:</p> <ul style="list-style-type: none"> any such waste will be properly managed, both on-site and off-site. the waste from the proposed facility can be dealt with appropriately by the waste infrastructure which is, 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. 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. 	<p>The approach to onsite and off-site management of wastes is set out in the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9). The detailed SWMP will be developed further once specific details of Contractors responsible for storage, handling and treatment and disposal of wastes are known.</p>
<p>5.15.16 Where necessary, the Secretary of State should use requirements or obligations to ensure that appropriate measures for waste management are applied.</p>	<p>N/A</p>
<p>5.15.17 The Secretary of State may wish to include a condition on revision of waste management plans at reasonable intervals when giving consent.</p>	<p>OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) will be updated post-consent and includes regular reviews of the plan to ensure details are up to date.</p>



19.3.5 Description of Wastes

19.3.5.1 Project Waste Types

15. The onshore elements of the Projects consist of the current Onshore Development Area, which includes the landfall, the Onshore Export Cable Corridor, accesses and the Onshore Substation Zone. The Onshore Export Cable Corridor is predominantly within agricultural land and includes a number of roads, railway, and watercourse crossings.
16. The landfall location is in the vicinity of Skipsea, to the south of Bridlington. The Onshore Export Cable Corridor connects landfall to the Onshore Substation Zone. The Projects will connect to the proposed Birkhill Wood National Grid substation via the Onward Cable Connection from the two Onshore Converter Stations.
17. Wastes generated from Projects activities will be classified as either inert, non-hazardous or hazardous in line with regulatory requirements. Wastes will be generated from construction, operational and decommissioning phases of the Projects.
18. The following waste types are expected to be generated from the Projects.
 - Inert wastes:
 - Soils and subsoil – removed from sites; and
 - Hardcore – that cannot be reused.
 - Non-hazardous wastes:
 - Drilling wastes – fluid and solids from trenchless crossing construction e.g. Horizontal Directional Drilling (HDD) activities;
 - Food waste – from welfare facilities;
 - General wastes – mixed packaging and general waste from welfare facilities and site offices;
 - Green waste – from vegetation removal and clearing if transferred from site;
 - Concrete and rubble;
 - Scrap metal;
 - Recyclables – plastic bottles, drinks cans that are segregated at site welfare facilities;
 - Sewage waste – from toilet facilities at Temporary Construction Compounds and Onshore Converter Stations; and
 - Wood – pallets, packing wastes, cable reels.
 - Hazardous wastes:



- Batteries, lead-acid;
 - Chemicals, off spec and unwanted;
 - Contaminated land – if any is identified and removed;
 - Empty drums, with residues – chemicals/oils/lubricants;
 - Medical/clinical waste – from first aid posts and from COVID-19 PPE measures;
 - Oil filters – from plant maintenance;
 - Oily rags – from plant maintenance;
 - Used oil – from equipment and plant; and
 - Waste electrical and electronic equipment (WEEE).
19. There will be a range of quantities of wastes generated from the Projects' construction activities.
20. Larger quantities of wastes will be generated during the construction phase e.g. excavated soils are outlined in the following sections.

19.3.5.2 Construction Waste Management Measures

21. Measures that will be implemented by the Projects to eliminate or reduce the anticipated quantity of waste sent to landfill will be developed using the waste hierarchy. These measures will increase reuse; recycling or recovery opportunities, thereby reducing significant environmental effects.
22. The **Outline Site Waste Management Plan (OSWMP), Appendix E** of the **Outline Code of Construction Practice (OCoCP) (Volume 8, application ref: 8.9)** will be developed in detail before construction starts to record any decisions given to materials resource efficiency when designing and planning the works. The **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)** will provide information on each waste type that is expected to be produced from the onshore elements of the Projects with the appropriate European Waste Catalogue (EWC) code and description for each waste type. It will provide an estimate of the quantity of each type of waste and the proposed waste management option for each waste produced (i.e. re-use, recycling, recovery, or disposal; on or off-site).

19.3.5.2.1 General Waste Management Measures

23. There are certain principles of waste management that can be applied to most wastes that would be produced during the construction phase. These are:
- Strict adherence to waste regulatory requirements for the storage and handling on-site;

- No waste from the Projects shall be deposited outside the Onshore Development Area, unless it is at a facility that holds a valid environmental permit or suitable authorised exemption;
 - Ensure that those who remove waste from site have the appropriate authorisation (i.e. are registered waste carriers);
 - Allocate space on site for the storage of waste materials and ensure that storage areas and containers are clearly labelled (appropriate signage) so site workers know which wastes should be put there;
 - Hazardous waste must be stored separately from non-hazardous wastes to avoid contamination.;
 - Provide separate containers for dry recyclables, such as paper and cardboard, plastic, glass, wood, and metal at welfare facilities within Temporary Construction Compounds (TCC). This would facilitate recycling;
 - Monitor the actual quantities of wastes produced during construction and update the **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)** to allow comparison with waste arisings estimated prior to construction. Record the proposed waste management option for each waste produced;
 - All wastes that are removed off-site would be described on a waste transfer note or hazardous waste consignment note (as appropriate) that tracks the movement of the waste to the specified disposal or recovery facility; and
 - The appointed site contractors will designate staff that are responsible for waste management and ensure that all contractor staff are aware of the appropriate reuse, recovery, or disposal routes for each waste.
24. These measures will promote sustainable waste management practices by maximising waste prevention, re-use, recycling, and recovery opportunities for material destined for off-site waste management. These measures are incorporated into the **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)**.

19.3.5.3 Construction Phase: Waste Types

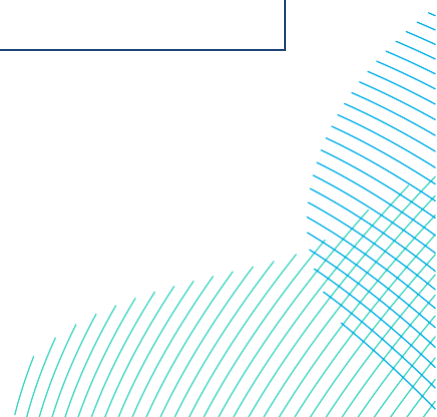
25. Waste material will be generated at all stages of the construction process, including site clearing, excavations, grading, foundation digging and waste material from project development. The main construction activities will be focused on the landfall, Onshore Export Cable Corridor, and Onshore Converter Stations' preparation and construction.

19.3.5.3.1 Landfall

26. Wastes will be generated at landfall from the following construction activities:
- Drilling;
 - Temporary Construction Compounds;
 - Transition Joint Bay (TJB) construction;
 - Site offices; and
 - Worker welfare facilities.
27. Drilling activities associated with HDD or other trenchless crossing works at landfall will generate some solid cuttings and drilling fluid residues. The drilling fluid will be recycled to be used at different locations via the mud plant and solid residues and sludge will be removed as waste when required.
28. The quantity of drilling solids will be related to the final number and length of trenchless crossing required for the landfall cable connections.
29. The construction of the up to six Transition TJB's will require excavation of subsoil which will be stockpiled and used in restoration around the landfall. If excess material cannot be reinstated around the works it will be removed from the site and disposed of offsite.
30. Site offices and welfare facilities will generate routine general wastes and will segregate specific materials that can be recycled by the waste contractor where segregated. Quantities of wastes produced will be linked to the number of construction staff using offices and welfare facilities and included in the detailed Site Waste Management Plan. This would also include estimates of the sewage and wastewater that will require management from toilets and wash stations based on worker numbers.
31. A summary of the expected waste types to be produced from the landfall construction phase is provided in **Table 19-2**. Quantities would be provided in the Site Waste Management Plan, at the detailed design stage.

Table 19-2 Landfall: Waste Types from Construction Phase

Classification	Waste Type	Comment
Inert wastes	Soils	Stockpiled and reused within the landfall site during restoration works.
	Subsoil	Six TJBs will be constructed requiring excavation of subsoils. Quantities of excavated materials will be estimated to confirm if excess inert material will require removal from the landfall.
	Hardcore	Haul roads within the landfall that are removed after use may produce quantities of hardcore/sub-base materials. Where these are not re-used within the Projects they may need to be disposed of as wastes offsite.
Non-hazardous wastes	Drilling fluids	Fluids from HDD activities (bentonite based fluids) are expected to be recycled by drilling contractors. Any excess or waste drilling fluids will be disposed of off-site as detailed in the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Drilling solids	Drilling wastes from HDD activities will be collected and disposed of in line with the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Food waste	Where food waste is collected separately at site welfare facilities it will be collected by waste contractors for treatment.
	General wastes	Mixed waste collected in bins and skips will be collected by waste contractors and treated and disposed of in line with the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Green waste	All green wastes will be processed within the landfall area and either composted in-situ or shredded.
	Concrete and rubble	All waste concrete or brick wastes will be used within the landfall as sub-base or utilised along the cable corridor. Any excess will be removed offsite by waste contractors.

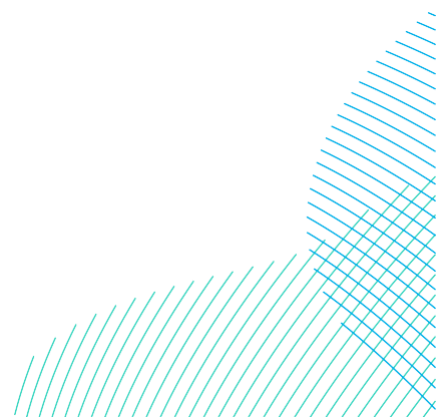


Classification	Waste Type	Comment
	Scrap metal	All segregated scrap metal will be recycled by waste contractors.
	Recyclables	Other segregated materials such as plastics will be recycled offsite via waste contractors.
	Sewage waste	All collected sewage from toilet facilities will be removed from site and treated at a permitted waste treatment facility.
	Wood	All wood will be reused where practicable.
Hazardous wastes	Batteries, lead-acid	All lead-acid batteries will be stored and collected by waste contractor for recycling.
	Chemicals (liquid)	All waste chemicals will be stored in line with the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) procedures and removed by waste contractors for treatment or disposal.
	Medical / clinical waste	Small quantities of medical waste from first aid posts will be collected and removed by specialist waste contractors.
	Contaminated soils	All contaminated soils will be stored and remediated onsite or removed offsite as detailed in the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Empty drums, with residues	All drums with residues will be stored and removed from site for treatment.
	Oil filters	Oil filters removed as part of plant maintenance will be stored and removed from site.
	Oily rags	All oil contaminated rags materials will be contained and removed from site.
	Used oil	Used oil be collected and stored in line with the requirements of the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) and removed for re-processing by waste contractors.

Classification	Waste Type	Comment
	WEEE	Any waste electronic equipment will be recycled by waste contractors.

19.3.5.3.2 Onshore Export Cable Corridor

32. The Onshore Export Cable Corridor will connect from landfall to the Onshore Converter Stations and is expected to be around 32km in length. Wastes will be generated from the following construction activities:
- Excavation of trenches and installation of cable ducts;
 - Jointing Bay construction;
 - HDD or other trenchless activities (where required);
 - Haul road construction and removal; and
 - Temporary Construction Compounds:
 - Main Temporary construction compounds (two locations); and
 - Satellite Temporary Construction Compounds (likely every 4km along the corridor).
33. The Onshore Export Cable Corridor, which connects cables from the Transition Joint Bays to the Onshore Converter Stations is expected to be around 32 km in length. Excavated soils and subsoils will be stockpiled along the route and re-instated after the cable installation. Any subsoil or soils that cannot be re-instated will be transferred offsite in line with the procedures set out in the **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)**.
34. An Onward Cable Corridor is required to connect the Projects' onshore export cable from the Onshore Converter Stations to the proposed Birkhill Wood National Grid Substation and is expected to be 2.5km in length.
35. There are anticipated to be up to 205 Jointing Bays along the Projects Onshore Export Cable Corridor. It is anticipated that all excavated soil material will be reinstated and used within the Onshore Export Cable Corridor as part of restoration.



36. A number of trenchless crossings will be required under river crossings, railways, roads and other features. All drilling wastes produced would be disposed of at an approved permitted waste site with the exact number and details of the estimated quantities of wastes will be developed in the detailed SWMP based upon the **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)**.
37. There will be haul roads installed along the Onshore Export Cable Corridor for use in the cable installation process and for transport of plant and materials between the Temporary Construction Compounds and work fronts. When the cable installation is completed, the haul road would be taken up and the topsoil reinstated.
38. There will be a number of Temporary Construction Compounds along the Onshore Export Cable Corridor. The worst case scenario would result in the Onshore Export Cable Corridor having 17 Temporary Construction Compounds comprising two main compounds and 15 satellite compounds including the landfall satellite compound.
39. The main construction compounds will utilise existing hard standing where available, and any soil-stripping required would be re-instated so that no waste will be generated.
40. The Temporary Construction Compounds will have offices and welfare facilities for workers so will generate routine general wastes and recyclables as well as sewage and wastewater from the toilet facilities. Quantities of these wastes will be produced while the compounds are being used. Further estimates of the amounts will be included in the detailed SWMP once peak numbers of workers are known.
41. Small quantities of other hazardous wastes such as batteries, used oil filters, used oils and medical wastes from the site first aid station will be produced and details of storage locations at the specific sites will be detailed in the **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)**. Further details of the types of wastes that will be generated along the Onshore Export Cable Corridor during the construction phase are set out in **Table 19-3**.

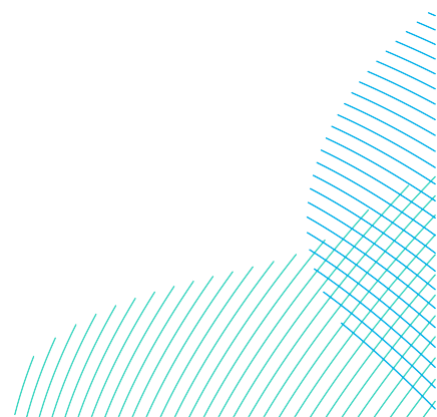
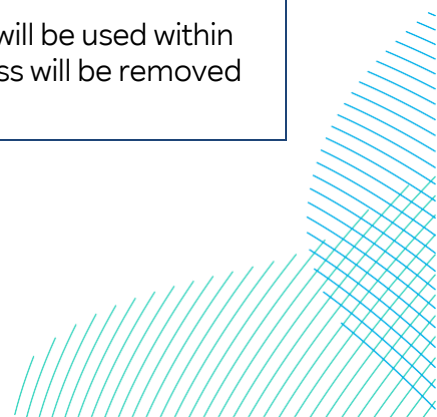


Table 19-3 Onshore Export Cable Corridor: Waste Types from Construction Phase

Classification	Waste Type	Comment
Inert wastes	Soils	Stockpiled and reused within the Onshore Export Cable Corridor during restoration works.
	Subsoil	The cable laying and Jointing Bays will require excavation of subsoils. Quantities of excavated materials will be included in the detailed SWMP to confirm if excess inert material will require removal from the Onshore Export Cable Corridor.
	Hardcore	Haul roads along the Onshore Export Cable Corridor that are removed after use may produce quantities of hardcore/sub-base materials. Where these are not re-used along other parts of the corridor they may need to be disposed of as wastes offsite.
Non-hazardous wastes	Drilling fluids	Fluids from trenchless crossing locations e.g. HDD activities are expected to be recycled by drilling contractors. Any excess or waste drilling fluids will be disposed of offsite as detailed in the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Drilling solids	
		Solid drilling wastes from trenchless crossing locations e.g. HDD activities will be collected and disposed of in line with the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Food waste	Where food waste is collected separately at site welfare facilities it will be collected by waste contractors for treatment.
	General wastes	Mixed waste collected in bins and skips will be collected by waste contractors and treated and disposed of in line with the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Green waste	All green wastes will be processed within the Onshore Export Cable Corridor and will remain within the corridor.
	Concrete and rubble	All waste concrete or brick wastes will be used within the corridor as sub-base. Any excess will be removed offsite by waste contractors.



Classification	Waste Type	Comment
	Scrap metal	All segregated scrap metal will be recycled by waste contractors.
	Recyclables	Other segregated materials such as plastics will be recycled offsite via waste contractors.
	Sewage waste	All collected sewage from toilet facilities will be removed from site and treated at a permitted waste treatment facility.
	Wood	All wood, such as pallets, will be reused where practicable.
Hazardous wastes	Batteries, lead-acid	All lead-acid batteries will be stored and collected by waste contractor for recycling.
	Chemicals (liquid)	All waste chemicals will be stored in line with the detailed SWMP procedures and removed by waste contractors for treatment or disposal.
	Medical / clinical waste	Small quantities of medical waste from first aid posts will be collected and removed by specialist waste contractors.
	Contaminated soils	All contaminated soils will be stored and remediated onsite or removed offsite as detailed in the detailed SWMP.
	Empty drums, with residues	All drums with residues will be stored and removed from site for treatment.
	Oil filters	Oil filters removed as part of plant maintenance will be stored and removed from site.
	Oily rags	All oil contaminated rags materials will be contained and removed from site.
	Used oil	Used oil be collected and stored in line with the requirements of the detailed SWMP and removed for re-processing by waste contractors.
	WEEE	Any waste electronic equipment will be recycled by waste contractors.

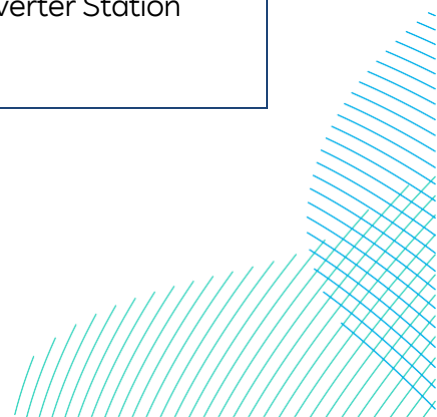


19.3.5.3.3 Onshore Converter Stations

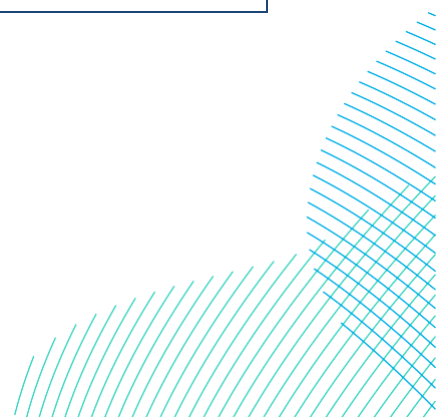
42. During the construction phase wastes will be generated from the following Projects' activities:
 - Site preparation;
 - Onshore Converter Stations' construction; and
 - Temporary Substation Zone Construction Compounds.
43. Two Onshore Converter Stations will be constructed to accommodate the connection of the Projects to the transmission grid.
44. To install the substation foundations the Onshore Converter Stations will be levelled and if required subsoil removed. Topsoil and subsoil generated from site preparation works at the Onshore Substation Zone will be retained on site where possible to be used in the site restoration and landscaping.
45. Any excess subsoil will be removed from the site and managed as a waste.
46. The site-based workers associated with the Projects at the Onshore Converter Stations during the construction, installation and commissioning will produce a range of non-hazardous wastes. These include general waste and toilet waste at the welfare facilities within the site temporary works areas or mobilisation areas. Further details and estimates will be developed in the detailed SWMP.
47. Further details of the types of wastes that will be generated at the Onshore Converter Stations during the construction phase are set out in **Table 19-4**.

Table 19-4 Onshore Converter Stations: Waste Types from Construction Phase

Classification	Waste Type	Comment
Inert wastes	Soils	Stockpiled and reused within the Onshore Converter Stations during restoration works.
	Subsoil	Quantities of excavated materials will be estimated to confirm if excess inert material will require removal from the site preparation.
	Hardcore	Haul roads that are removed after use may produce quantities of hardcore/sub-base materials.
	Drilling fluids	Not applicable in the Onshore Converter Station construction areas.
	Drilling solids	



Classification	Waste Type	Comment
Non-hazardous wastes	Food waste	Where food waste is collected separately at site welfare facilities it will be collected by waste contractors for treatment.
	General wastes	Mixed waste collected in bins and skips will be collected by waste contractors and treated and disposed of in line with the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Green waste	All green wastes will be processed within the Onshore Converter Stations' construction area.
	Concrete and rubble	All waste concrete or brick wastes will be used within the Onshore Converter Stations. Any excess will be removed offsite by waste contractors.
	Scrap metal	All segregated scrap metal will be recycled by waste contractors.
	Recyclables	Other segregated materials such as plastics will be recycled offsite via waste contractors.
	Sewage waste	All collected sewage from toilet facilities will be removed from site and treated at a permitted waste treatment facility.
	Wood	All wood, such as pallets, will be reused where practicable.
Hazardous wastes	Batteries, lead-acid	All lead-acid batteries will be stored and collected by waste contractor for recycling.
	Chemicals (liquid)	All waste chemicals will be stored in line with the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) procedures and removed by waste contractors for treatment or disposal.
	Medical / clinical waste	Small quantities of medical waste from first aid posts will be collected and removed by specialist waste contractors.



Classification	Waste Type	Comment
	Contaminated soils	All contaminated soils will be stored and remediated onsite or removed offsite as detailed in the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) .
	Empty drums, with residues	All drums with residues will be stored and removed from site for treatment.
	Oil filters	Oil filters removed as part of plant maintenance will be stored and removed from site.
	Oily rags	All oil contaminated rags materials will be contained and removed from site.
	Used oil	Used oil be collected and stored in line with the requirements of the OSWMP Appendix E of the OCoCP (Volume 8, application ref: 8.9) and removed for re-processing by waste contractors.
	WEEE	Any waste electronic equipment will be recycled by waste contractors.

19.3.5.4 Operational Phase: Waste Types

19.3.5.4.1 Onshore Export Cable Corridor

48. Occasional routine maintenance works will be required during the operational phase. In the event of a cable failure, it may be necessary to excavate around the cables and replace / repair the faulty cable along specific sections. Limited waste arisings are anticipated in accordance with this activity relating to excavated material and faulty cable.

19.3.5.4.2 Onshore Converter Stations

49. The servicing of equipment at the Onshore Converter Stations is likely to give rise to small quantities of liquid hazardous waste (used oil, solvents, paints etc.), solid hazardous waste (oil-contaminated wipes, absorbents) and non-hazardous waste (packaging, cables, metal waste, plastic waste).
50. The Onshore Converter Stations will be unmanned, however due to the requirement for general maintenance, personnel / maintenance engineers would visit the site on a regular basis. Small amounts of general waste may be generated.

19.3.5.4.3 Operational Waste Management Measures

51. Personnel generating waste from the servicing and maintenance of the Onshore Export Cable Corridor and Onshore Converter Stations would be under a legal obligation to comply with the waste duty of care to ensure that they handle waste safely and in compliance with the appropriate regulations (Defra, 2018a).

19.3.5.5 Decommissioning Phase

52. No decision has been made regarding the final decommissioning policy for the Projects, as it is recognised that industry best practice, rules and legislation change over time.
53. The decommissioning methodology cannot be finalised until immediately prior to decommissioning but would be in line with relevant legislation, policy and guidance at that time.

19.3.6 Waste Treatment and Disposal Options

19.3.6.1 Regional Waste Management Facilities

54. The waste management facilities for the Yorkshire and the Humber region where the Projects will be developed have been identified as these are will potentially receive project-generated wastes. Data published by the Environment Agency for the waste sites throughout Yorkshire and the Humber and specifically in the East Riding of Yorkshire and the neighbouring counties have been presented in **Table 19-6** to **Table 19-9**.
55. The data in the **Table 19-6** to **Table 19-9** for 2021 confirm the widespread availability of a range of types of waste management facilities within the region, based upon the most current published data set (Environment Agency, 2024). This provides an indication of whether the estimated waste types from the Projects can be managed within the region in accordance with the proximity principle (i.e. managing wastes as close to the source of production as possible).
56. Specific waste management sites to transfer wastes have not been identified at this stage as they would be contracted as required and would be identified in the detailed SWMP for the construction works. A range of waste management sites have been identified within 10 km of the landfill and details are provided in **Table 19-5**.

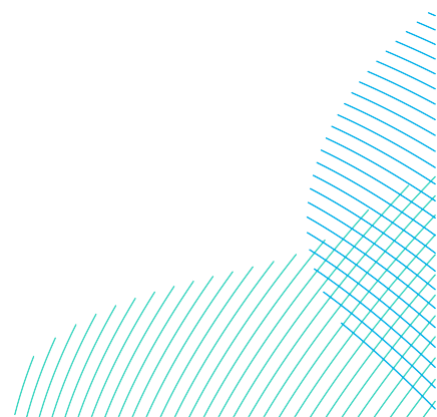


Table 19-5 Waste sites with Permits within 10km of the Landfall

Site Name	Address	Site Type	Permit No.
W CLIFFORD WATTS LIMITED	Land / Premises At, Gransmoor Lane, Harpham, Bridlington, East Yorkshire, YO25 8HZ	A5: Landfill taking Non-Biodegradable Wastes	QP3599ZF
W CLIFFORD WATTS LIMITED	Gransmoor Quarry, Gransmoor Lane, Harpham, East Yorkshire, YO25 8HZ	SR2010 No12: Treatment of waste to produce soil < 75,000 tpy	GP3292ZU
EAST COAST CONSTRUCTION (N E) LIMITED	The Old Tarmac Mortar Plant, Catwick Lane, Brandesburton, East Yorkshire, YO25 8SA	S0811 No 11: Inert & excavation Waste TS + treatment	DB3404FB
SANDSFIELD GRAVEL COMPANY LIMITED	Sandsfield Farm, Catwick Lane, Brandesburton, Driffield, East Yorkshire, YO25 8SA	A4: Household, Commercial & Industrial Waste Landfill	QP3899ZW
SANDSFIELD GRAVEL COMPANY LIMITED	Sandsfield Farm, Catwick Lane, Brandesburton, East Yorkshire, YO25 8SA	S1207 No 7: Composting in open systems	DB3103MP
SANDSFIELD GRAVEL COMPANY LIMITED	Sandsfield Gravel Company Ltd, Catwick Lane, Brandesburton, Driffield, East Yorkshire, YO25 8SB	A11: Household, Commercial & Industrial Waste T Stn	QP3299ZU
SANDSFIELD GRAVEL COMPANY LIMITED	Land/ Premises At, Catwick Lane, Brandesburton, Driffield, East Yorkshire, YO25 8SA	A6: Landfill taking other wastes	RP3699ZN
A M SKIPS (YORKSHIRE) LIMITED	Park View, Leven Road, Brandesburton, Driffield, East Yorkshire, YO25 8RT	A11: Household, Commercial & Industrial Waste T Stn	CP3098EC
PAUL MATTHEW STABLER AND JOHN FRANCIS STABLER	Carnaby Industrial Estate, Bridlington, East Yorkshire, YO15 3QY	A11: Household, Commercial & Industrial Waste T Stn	XP3692ZX

19.3.6.2 Availability and Capacity of Regional Facilities

57. The landfill capacity in Yorkshire and the Humber is presented in **Table 19-7** which confirms that large capacities of both non-hazardous and inert waste are available to the Projects. Even if larger quantities of soils were required to be disposed of from the onshore construction activities, suitable capacity exists within the region into the future to receive these.
58. The data in **Table 19-8** indicates there is sufficient incineration capacity in the region, where non-hazardous or hazardous wastes are required to be treated at these facilities.
59. The information shows that there are numerous waste management facilities providing a wide variety of waste management options within the local area. **Table 19-9** indicates the number of regional waste treatment and recycling sites that can be utilised by the Projects. The closest permitted sites will be identified by the Waste Contractors responsible for managing the wastes and will be confirmed in the detailed SWMP along with key waste requirements.
60. The current overall capacity data means that these facilities are likely to be capable of managing all of the of the wastes requiring off-site management that are predicted to be generated by the Projects during construction and operation.
61. The local and regional waste management capability sets the baseline condition of waste management infrastructure. A detailed SWMP based on the requirements of the **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)** would cover all construction works and will be produced post-consent identifying all wastes that will be generated from the Projects.
62. The **OSWMP Appendix E** of the **OCoCP (Volume 8, application ref: 8.9)** will identify specific Waste Contractors that will be responsible for the collection and transfer of all waste streams and will detail specific local waste management facilities that will be used to treat or dispose of the Projects' generated wastes.

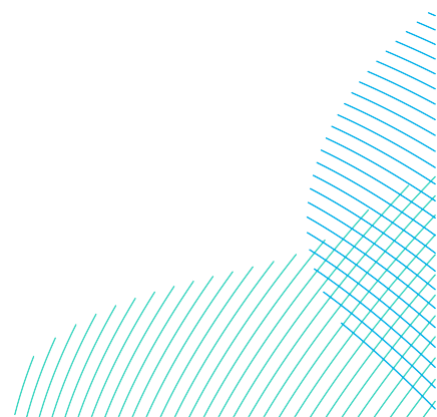
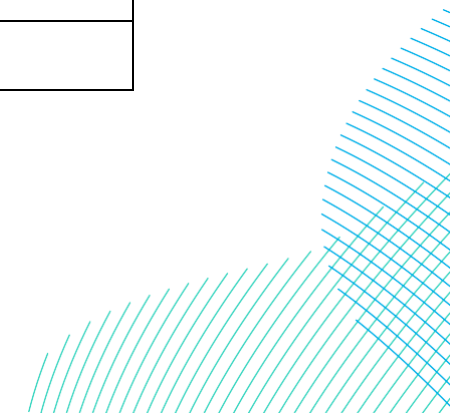


Table 19-6 Number of Waste Management Facilities in Yorkshire and the Humber (2022)

Site type		Former Planning Region
		Yorkshire & the Humber
Landfill	Number of sites with an environmental permit at end 2022	67
	Number of sites that accepted waste in 2022	37
Land Disposal	Number of sites with an environmental permit at end 2022	43
	Number of sites that accepted waste in 2022	14
Incineration	Number of sites with an environmental permit at end 2022	35
	Number of sites that accepted waste in 2022	16
Transfer	Number of sites with an environmental permit at end 2022	344
	Number of sites that accepted waste in 2022	267
Treatment	Number of sites with an environmental permit at end 2022	284
	Number of sites that accepted waste in 2022	294
Metal Recovery	Number of sites with an environmental permit at end 2022	342



	Number of sites that accepted waste in 2022	172
Use of Waste	Number of sites with an environmental permit at end 2022	-
	Number of sites that accepted waste in 2022	-
Total	Number of sites with an environmental permit at end 2022	1,115
	Number of sites that accepted waste in 2022	800

Source: Environment Agency (2024)

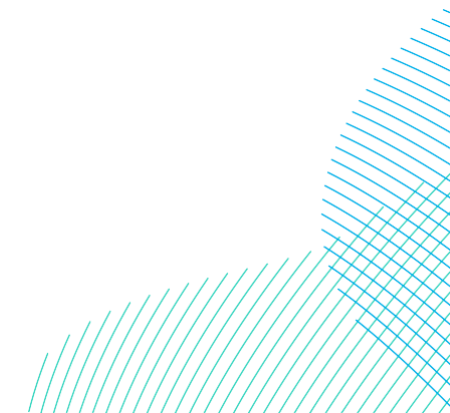


Table 19-7 Remaining landfill capacity in Yorkshire and the Humber: 2022 (000s cubic metres)

Landfill Type	Sub-Region				YORKSHIRE AND THE HUMBER
	Former Humberside	North Yorkshire	South Yorkshire	West Yorkshire	
Hazardous Merchant	476	-	-	-	476
Hazardous Restricted	-	-	-	-	0
Non Hazardous with SNRHW cell*	1,243	-	-	-	1,243
Non Hazardous	19,628	17,574	3,226	152	40,580
Non Hazardous Restricted	-	-	-	-	0
Inert	15,029	864	5,650	3,384	24,928
Total	36,377	18,438	8,877	3,536	67,228
<p>*Some non-hazardous sites can accept some Stable Non Reactive Hazardous Wastes (SNRHW) into a dedicated cell, but this is usually a small part of the overall capacity of the site.</p>					

Source: Environment Agency (2024)

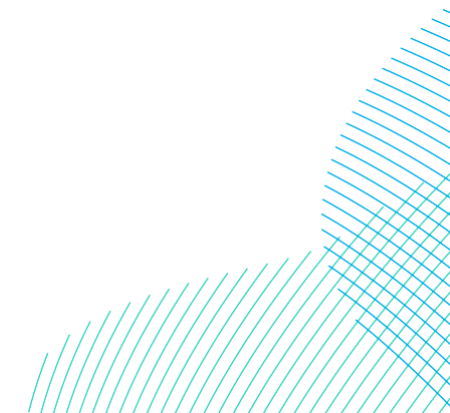


Table 19-8 Incineration Capacity in Yorkshire and the Humber: 2022 (000s tonnes)

Incineration Type	Sub-Region				Yorkshire and Humber
	Former Humberside	North Yorkshire	South Yorkshire	West Yorkshire	
Animal By-Product	80	-	-	-	80
Animal Carcasses	-	-	-	-	-
Clinical	-	-	-	13	13
Co-Incineration of Hazardous Waste	-	-	-	-	-
Co-Incineration of Non Hazardous Waste	-	-	-	-	-
Hazardous	-	-	-	-	-
Municipal and/or Industrial & Commercial	335	-	254	1,561	2,150
Sewage Sludge	-	-	-	-	-
Biomass/Wood Waste	15	-	460	-	475
Total	430	-	714	1,575	2,719

Source: Environment Agency (2024)

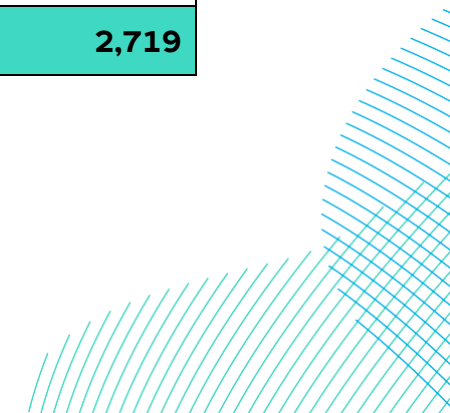
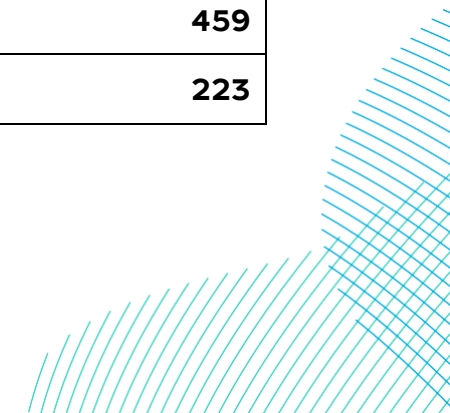
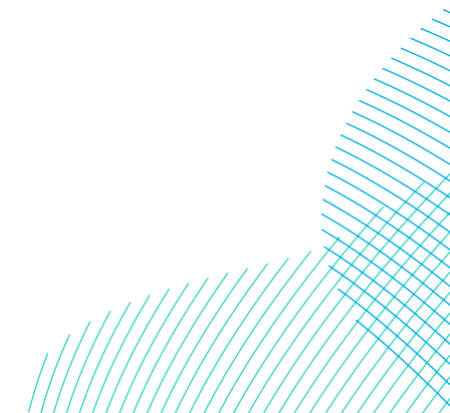


Table 19-9 Transfer, Treatment, and Metal Recycling Site Inputs in Yorkshire and the Humber: 2022 (000s tonnes)

Site Type	Sub-Region				Yorkshire and Humber
	Former Humberside	North Yorkshire	South Yorkshire	West Yorkshire	
Hazardous waste	172	33	441	143	789
HIC	1,209	440	978	968	3,595
Clinical	0	-	12	11	23
Civic amenity site	137	60	55	215	467
Non Biodegradable	-	22	412	42	475
Transfer Total	1,518	556	1,897	1,378	5,349
Material recovery	2,007	69	426	714	3,216
Physical	2,467	652	1,669	1,842	6,629
Physico-chemical	274	54	19	111	459
Chemical	2	-	52	169	223



Site Type	Sub-Region				Yorkshire and Humber
	Former Humberside	North Yorkshire	South Yorkshire	West Yorkshire	
Composting	104	85	71	129	389
Biological	690	237	430	3,894	5,251
Treatment Total	5,545	1,097	2,667	6,859	16,168
Vehicle depollution	24	18	326	77	445
Metal recycling site	739	31	570	282	1,621
Metal Recycling Sector Total	763	49	896	359	2,067



19.3.7 Conclusion

19.3.7.1 Construction Phase

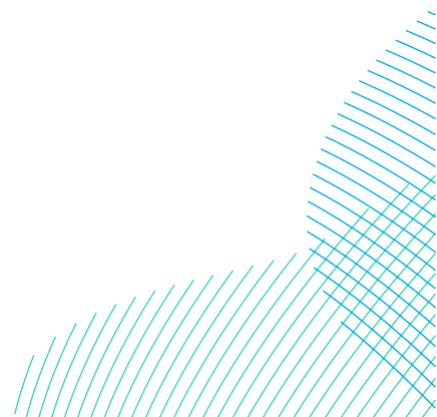
63. Most of this material is likely to be inert or non-hazardous because the Onshore Development Area is largely greenfield. Any excavated material that is not suitable for use on site or is surplus to requirements for use for construction purposes would be sent off-site in accordance with the waste hierarchy.
64. Options for reuse or recovery, for example to a soil conditioning facility; or beneficial use as restoration material at a local landfill, would be prioritised to ensure that the amount of waste excavated material being disposed to landfill is reduced to an absolute minimum.
65. Containers will be provided at Temporary Construction Compounds to collect different waste streams and allow the separate collection of dry recyclables. Segregation of the different waste streams would ensure that the maximum amount of waste is diverted for reuse, recycling, and recovery.
66. There are sufficient facilities within the region to recycle, treat or dispose of all generated wastes.

19.3.7.2 Operational Phase

67. Limited operational wastes are expected to be generated from routine maintenance and servicing works at the Onshore Export Cable Corridor and Onshore Converter Stations.
68. Although the Onshore Export Cable Corridor and Onshore Converter Stations will be unmanned, personnel / maintenance engineers will be required to visit the site. Small amounts of solid domestic waste will be generated. Wastes produced during operation phase would be managed in accordance with the general principles of the waste duty of care and suitable waste management plans and procedures will be developed.

19.3.7.3 Decommissioning Phase

69. No decision has been made regarding the final decommissioning policy for the Projects, as it is recognised that industry best practice, rules and legislation change over time.



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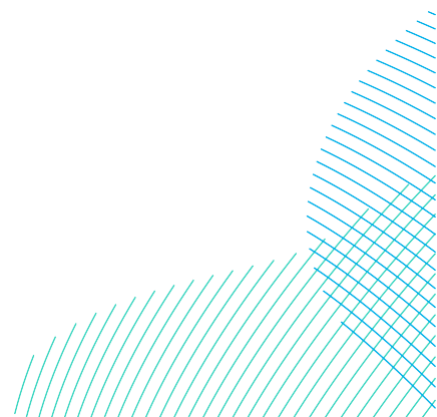
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