

# DOGGER BANK D WIND FARM

## Preliminary Environmental Information Report

Volume 2

Appendix 19.3 Onshore Waste and Resources  
Technical Report

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## Glossary

Term	Definition
Additional Mitigation	<p>Measures identified through the EIA process that are required as further action to avoid, prevent, reduce or, if possible, offset likely significant adverse effects to acceptable levels (also known as secondary (foreseeable) mitigation).</p> <p>All additional mitigation measures adopted by the Project are provided in the Commitments Register.</p>
Design	All of the decisions that shape a development throughout its design and pre-construction, construction / commissioning, operation and, where relevant, decommissioning phases.
Development Consent Order (DCO)	A consent required under Section 37 of the Planning Act 2008 to authorise the development of a Nationally Significant Infrastructure Project, which is granted by the relevant Secretary of State following an application to the Planning Inspectorate.
Effect	An effect is the consequence of an impact when considered in combination with the receptor's sensitivity / value / importance, defined in terms of significance.
Environmental Impact Assessment (EIA)	A process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information and includes the publication of an Environmental Statement.
Environmental Statement (ES)	A document reporting the findings of the EIA which describes the measures proposed to mitigate any likely significant effects.
Evidence Plan Process (EPP)	A voluntary consultation process with technical stakeholders which includes a Steering Group and Expert Topic Group (ETG) meetings to encourage upfront agreement on the nature, volume and range of supporting evidence required to inform the EIA and HRA process.
Expert Topic Group (ETG)	A forum for targeted technical engagement with relevant stakeholders through the EPP.
Impact	A change resulting from an activity associated with the Project, defined in terms of magnitude.
Mitigation	<p>Any action or process designed to avoid, prevent, reduce or, if possible, offset potentially significant adverse effects of a development.</p> <p>All mitigation measures adopted by the Project are provided in the Commitments Register.</p>

Term	Definition
Project Design Envelope	<p>A range of design parameters defined where appropriate to enable the identification and assessment of likely significant effects arising from a project's worst-case scenario.</p> <p>The Project Design Envelope incorporates flexibility and addresses uncertainty in the DCO application and will be further refined during the EIA process.</p>
Scoping Opinion	<p>A written opinion issued by the Planning Inspectorate on behalf of the Secretary of State regarding the scope and level of detail of the information to be provided in the Applicant's Environmental Statement.</p> <p>The Scoping Opinion for the Project was adopted by the Secretary of State on 02 August 2024.</p>
Scoping Report	<p>A request by the Applicant made to the Planning Inspectorate for a Scoping Opinion on behalf of the Secretary of State.</p> <p>The Scoping Report for the Project was submitted to the Secretary of State on 24 June 2024.</p>
Study Areas	A geographical area and / or temporal limit defined for each EIA topic to identify sensitive receptors and assess the relevant likely significant effects.
The Applicant	SSE Renewables and Equinor acting through 'Doggerbank Offshore Wind Farm Project 4 Projco Limited'.
The Project	Dogger Bank D (DBD) Offshore Wind Farm Project, also referred to as DBD in this PEIR.

## 19.3 Onshore Waste and Resources

### 19.3.1 Introduction

1. This appendix to the Dogger Bank D Offshore Wind Farm (hereafter ‘the Project’ or ‘DBD’) Preliminary Environmental Information Report (PEIR) supports **Volume 1, Chapter 19 Geology and Ground Conditions**. This appendix forms part of the PEIR for the onshore elements of the Project.
2. The purpose of this appendix is to identify the types of wastes that are likely to be generated as part of the onshore development of the Project during the construction, operation and decommissioning phases. The onshore elements of the Project will include the landfall, onshore export cable corridor (ECC), Onshore Converter Station (OCS) and Electricity Storage and Balancing Infrastructure (ESBI) (within the OCS zone). A full description of the Project is provided in **Volume 1, Chapter 4 Project Description**.
3. This Waste and Resources Technical Report should be read in conjunction with the Outline Site Waste Management Plan (SWMP) that is included as Appendix B of the Outline Code of Construction Practice (Outline CoCP), a draft version of the **Outline CoCP** (document reference 8.9) and **Outline SWMP** (document reference 8.9.2) have been provided at PEIR stage. The Outline SWMP will inform the SWMP as part of the CoCP (Commitment ID CO52, see **Appendix 6.3 Commitments Register**).

### 19.3.2 Approach

4. This document assesses the types of solid wastes and materials that are likely to be produced as part of the construction, operation, and decommissioning phases of the Project onshore. The report considers the proposed options for preventing, 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 likely to be generated.
5. 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 Project; and
  - Assess the implications of project-generated wastes on local/regional waste capacity.
  - Confirm how the requirements set out in National Policy Statement (NPS) EN-1 relating to waste management will be implemented in this document and linked to the Outline SWMP.

6. The approach to this study is in line with the methodology outlined in the Institute of Environmental Management and Assessment (IEMA) guide to Materials and Waste in Environmental Impact Assessment (IEMA, 2020), although no impact assessment has been undertaken.
7. Data on the local and regional waste management capacity have been identified from sources published by the Environment Agency (see **Table 19.3-7** to **Table 19.3-11**).

### 19.3.3 Policy and Legislation

#### 19.3.3.1 National Policy Statements

8. Planning policy on energy Nationally Significant Infrastructure Projects (NSIPs) is set out in the National Policy Statements (NPS). The following NPS are relevant to the waste study:
  - Overarching NPS for Energy (EN-1) (Department for Energy Security and Net Zero (DESNZ), 2023a);
  - NPS for Renewable Energy Infrastructure (EN-3) (DESNZ, 2023b); and
  - NPS for Electricity Networks Infrastructure (EN-5) (DESNZ, 2023c).
9. The waste and resource management study has been prepared with reference to specific requirements in the above NPS. The relevant parts of the NPS are summarised in **Table 19.3-1** along with how and where they have been considered in this PEIR appendix.
10. Specific measures incorporated as part of the final Project design and how they will be secured will be confirmed in the Environmental Statement (ES). The final results of the EIA will consider the potential benefits of coordination measures committed to by the Project to reduce impacts on local communities and the environment from cumulative developments.
11. The specific requirements for waste are detailed in EN-1 and are summarised in **Table 19.3-1**. The supporting documents EN-3 and EN-5 do not have detailed requirements for waste management.

*Table 19.3-1 Summary of Relevant National Policy Statement Requirements for the Waste Management*

NPS Reference and Requirement	How and Where Considered in the Appendix
<b>NPS for Energy (EN-1)</b>	
<p>Para. 5.15.2:</p> <p>“Sustainable waste management is implemented through the waste hierarchy, which sets out the priorities that must be applied when managing waste. These are (in order):</p> <ul style="list-style-type: none"> <li>• prevention</li> <li>• preparing for reuse</li> <li>• recycling</li> <li>• other recovery, including energy recovery</li> <li>• disposal”</li> </ul>	<p>See approach to the waste hierarchy and proposed targets for recycling set out in the Outline SWMP (Appendix B of the Outline CoCP).</p>
<p>Para. 5.15.3:</p> <p>“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 will be implemented, as described in <b>Section 19.3.1.1.1.1</b> and as detailed in the Outline SWMP.</p>
<p>Para. 5.15.4:</p> <p>“All large infrastructure projects are likely to generate some hazardous and non-hazardous waste. The EA’s Environmental Permit regime incorporates operational waste management requirements for certain activities. When an applicant applies to the EA for an Environmental Permit, the EA will require the application to demonstrate that processes are in place to meet all relevant Environmental Permit requirements.”</p>	<p>The Project activities will be reviewed and the requirement for an Environmental Permit that may include requirements for non-hazardous and hazardous wastes, will be discussed with the Environment Agency if relevant.</p>
<p><b>Applicant assessment</b></p> <p>Para. 5.15.8:</p> <p>“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>This Waste and Resources study provides details and sets out the approach to sustainable waste management and is supported by the Outline SWMP.</p>
<p>Para. 5.15.9:</p>	<p>Details provided in the Outline SWMP.</p>



NPS Reference and Requirement	How and Where Considered in the Appendix
<p>“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>The capacity of waste management facilities is considered at regional level in this report, see <b>Section 19.3.11</b>.</p> <p>There will be very small O&amp;M phase waste arisings from the landfall, the onshore ECC and the OCS zone infrastructure and where produced will be managed as sustainably as practical in line with the regulatory requirements.</p>
<p>Para. 5.15.10:</p> <p>“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 Outline SWMP.</p>
<p>Para. 5.15.12:</p> <p>“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 <b>Volume 1, Chapter 4 Project Description</b>.</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 Outline SWMP.</p>
<p>Para. 5.15.13:</p> <p>“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 <b>Section 19.3.7</b> of this appendix and the Outline SWMP.</p>
<p><b>Secretary of State decision making</b></p> <p>Para. 5.15.14:</p>	<p>Waste from the Project will be classified as non-hazardous or hazardous waste in line with the expected wastes that are likely to be generated as set out in <b>Section 21</b> and detailed in the Outline SWMP.</p>

NPS Reference and Requirement	How and Where Considered in the Appendix
<p>“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>Para. 5.15.15:</p> <p>“The Secretary of State should be satisfied that:</p> <ul style="list-style-type: none"> <li>any such waste will be properly managed, both on-site and off-site.</li> <li>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.</li> <li>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.”</li> </ul>	<p>The approach to onsite and off-site management of wastes is set out in the Outline SWMP.</p> <p>The SWMP will be developed further once specific details of contractors responsible for storage, handling and treatment and disposal of wastes are known.</p> <p>The waste hierarchy will be implemented, and measures will be put in place to maximise the reuse and recycling of specific waste types minimising waste disposal to landfill.</p>
<p>Para. 5.15.16:</p> <p>“Where necessary, the Secretary of State should use requirements or obligations to ensure that appropriate measures for waste management are applied.”</p>	N/A
<p>Para. 5.15.17:</p> <p>“The Secretary of State may wish to include a condition on revision of waste management plans at reasonable intervals when giving consent.”</p>	<p>The Outline SWMP will be updated post-consent and includes regular reviews of the plan to ensure details are up to date.</p>

### 19.3.3.2 Waste Policy and Legislation

- 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 31<sup>st</sup> January 2020.

13. 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 remains in place in the UK. National policy and legislation relevant to the waste management study is summarised in the following sections.

#### 19.3.1.1.1 National Legislation and Waste Strategy

14. 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 (see **Section 19.3.1.1.1.1**) (Defra, 2018a). Other key waste legislation includes the following:
- The Hazardous (England and Wales) Waste Regulations 2005, as amended; and
  - Environmental Permitting (England and Wales) Regulations 2016, as amended.
15. The following waste strategy and plans detail the UK Government's 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).

#### 19.3.1.1.1.1.Waste Hierarchy

16. The waste hierarchy requires the producer/holder of a waste to demonstrate that the priorities identified in **Table 19.3-2** have been considered in the priority order, to determine the most suitable waste management option for all wastes prior to removal from site (Defra, 2011).

*Table 19.3-2 The Waste Hierarchy*

Stage	Description
Prevention	Using less material in design and manufacture, keeping products for longer, re-use, using less hazardous materials.
Preparing for reuse	Checking, cleaning, repairing, refurbishing, whole items, or spare parts.
Recycling	Turning waste into a new substance or product, includes composting if it meets quality protocols.
Other recovery	Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat, and power) and materials from waste, some backfilling.

Stage	Description
Disposal	Landfill and incineration without energy recovery.

17. It is a legal requirement for waste producers/holders to follow the waste hierarchy when making decisions about waste management options. Lower hierarchical options cannot be justified by cost alone. They require environmental justification over available higher options, for example the location of a site may justify sending waste to a lower hierarchical option (e.g. local landfill), rather than sending it hundreds of miles to the nearest facility that could provide a higher option.

### 19.3.4 Consultation

18. Topic-specific consultation in relation to the waste and resources has been undertaken in line with the process set out in **Volume 1, Chapter 7 Consultation**. A Scoping Opinion from the Planning Inspectorate was received on 2<sup>nd</sup> August 2024, which has informed the scope of the study presented within this appendix (as outlined in **Section 19.3.2**).
19. **Appendix 19.1 Consultation Responses for Geology and Ground Conditions and Waste** summarises how consultation responses received to date are addressed in this appendix.
20. Feedback received through the ongoing Evidence Plan Process (EPP) in relation to Expert Topic Group (ETG) meetings and wider technical consultation meetings with relevant stakeholders has also been considered in the preparation of this appendix. Details of technical consultation undertaken to date on the waste management approach are provided in **Table 19.3-3**.

*Table 19.3-3 Technical Consultation Undertaken to Date on the Waste Management Study*

Meeting	Stakeholder(s)	Date(s) of Meeting / Frequency	Purpose of Meeting
<b>ETG Meetings</b>			
ETG10 (Water Resources, Flood Risk, Geology and Ground Conditions) Meeting 02	Environment Agency Beverley and North Holderness Internal Drainage Board (IDB) East Riding of Yorkshire Council	24/09/2024	Present high-level approach and proposed methods

21. Following statutory consultation on the waste study presented in the PEIR, this appendix will be updated in full consideration of stakeholders' feedback, and refinements to the Project's design envelope. The final results of the EIA will be presented in the ES. Full details of consultation undertaken throughout the EIA process will be presented in a Consultation Report, which will be submitted with the Development Consent Order (DCO) application.

### 19.3.5 Description of Wastes

22. The onshore elements of the Project consist of the Onshore Development Area, which includes the landfall, the onshore ECC, accesses and the OCS and ESBI (within the OCS zone). The onshore ECC is predominantly within agricultural land and includes a number of road and watercourse crossings.
23. The landfall is located south-east of Skipsea and the onshore ECC connects the landfall to the OCS zone. The Project will connect to the Birkhill Wood Substation via the onward cable connection from the OCS zone, see **Volume 1, Chapter 4 Project Description** for full details.
24. Wastes generated from Project activities will be classified as either inert, non-hazardous or hazardous in line with regulatory requirements. Wastes will be generated from construction, operation and maintenance (O&M) and decommissioning phases of the Project.
25. The following waste types are expected to be generated from the Project.
- Inert wastes:
    - Soils and subsoil – removed from sites.
    - Hardcore – that cannot be reused.
  - Non-hazardous wastes:
    - Drilling wastes – fluid and solids from trenchless crossing construction.
    - 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 OCS.

- 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.
    - Oil filters – from plant maintenance.
    - Oily rags - from plant maintenance.
    - Used oil - from equipment and plant.
    - Waste electrical and electronic equipment (WEEE).
26. There will be a range of quantities of wastes generated from the Project construction activities. Larger quantities of wastes will be generated during the construction phase e.g. excavated soils and are outlined in the following sections or construction of infrastructure such as the OCS.

### 19.3.6 Construction Waste Management Measures

27. Measures that will be implemented by the Project through the Project's lifecycle to eliminate and 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 in line with circular economy principles.
28. A draft version of the Outline SWMP (Appendix B of the Outline CoCP) has been developed at PEIR stage and it will be refined at ES stage. A SWMP will be prepared by the contractor appointed to carry out the works before construction. The plan will document decisions made regarding materials resource efficiency when designing and planning the works.
29. The Outline SWMP provides information on each waste type that is expected to be produced from the onshore elements of the Project with the appropriate European Waste Catalogue 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).

### 19.3.7 General Waste Management Measures

30. There are certain principles of waste management that can be applied to most wastes that would be produced during the construction and O&M phases. These are:
- Strict adherence to waste regulatory requirements for the storage and handling on-site;
  - No waste from the Project shall be deposited outside the Onshore Development Area, unless it is at a facility that holds a valid environmental permit or suitable authorised exemption;
  - The Project will ensure that those vendors who remove waste from site have the appropriate authorisation (i.e. are registered waste carriers);
  - Adequate space on site will be allocated for the storage of waste materials and site staff will ensure that storage areas and containers are clearly labelled to facilitate appropriate disposal by site staff;
  - Hazardous waste must be stored separately from non-hazardous wastes to avoid contamination;
  - Provision of separate containers for dry recyclables, such as paper and cardboard, plastic, glass, wood, and metal at welfare facilities within temporary construction compounds to facilitate recycling;
  - Monitoring of the actual quantities of wastes produced during construction and update of the Outline SWMP (Appendix B of the Outline CoCP) 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 will 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.
31. 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 Outline SWMP (Appendix B of the Outline CoCP).

### 19.3.8 Construction Phase: Waste Types by Parts of Key Onshore Infrastructure

32. Waste material will be generated at all stages of the construction process, including site clearing, excavations, grading, foundation digging and waste material. The main construction activities will be focused on the following Project areas:
- Landfall;

- Onshore ECC; and
  - OCS and ESBI site preparation and construction.
33. An overview of each of these onshore construction locations and the specific wastes expected to be generated are described in the following sections.

#### 19.3.8.1 Landfall

34. Wastes will be generated at landfall from the following construction activities:
- Trenchless techniques;
  - Temporary construction compounds;
  - Transition Joint Bay (TJB) construction;
  - Site offices; and
  - Worker welfare facilities.
35. Drilling activities associated with 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. The quantity of drilling solids will be related to the final number and length of landfall trenchless crossing required for the landfall cable connections.
36. The construction of one TJB 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 at an authorised facility.
37. Site offices and welfare facilities will generate routine general wastes and will segregate specific materials that can be recycled by the waste contractor where possible. Quantities of wastes produced will be linked to the number of construction staff using offices and welfare facilities and included in the SWMP. Based on professional judgement this is expected to be between 150 to 250 tonnes of waste per year. This would also include estimates of the sewage and wastewater that will require management from toilets and wash stations based on worker numbers.
38. A summary of the expected waste types to be produced from the landfall construction phase is provided in and with further information provided in **Table 19.3-4** the Outline SWMP. Further refinements of the waste quantities will be provided in the SWMP by the Principal Contractor.



Table 19.3-4 Landfall: Waste Types from Construction Phase

Waste Type	Comment
<b>Inert Wastes</b>	
Soils	Stockpiled and reused within the landfall site during restoration works.
Subsoil	A TJB will be constructed requiring excavation of subsoils. Quantities of excavated materials will be estimated to confirm if excess inert material will be reused on site or will require removal from the site.
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 Project they will be disposed of as wastes offsite at an authorised facility.
<b>Non-hazardous Wastes</b>	
Drilling fluids	Fluids from trenchless installation activities (bentonite based fluids) are expected to be recycled by drilling contractors. Any excess or waste drilling fluids will be disposed of as detailed in the Outline SWMP.
Drilling solids	Drilling wastes from trenchless installation activities will be collected and disposed of in line with the Outline SWMP.
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 Outline SWMP.
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.
Scrap metal	All segregated scrap metal will be recycled by waste contractors.

Waste Type	Comment
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.
<b>Hazardous Wastes</b>	
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 requirements of the Outline 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 Outline 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 Outline SWMP and removed for re-processing by waste contractors.
WEEE	Any waste electronic equipment will be recycled by waste contractors.

### 19.3.8.2 Onshore Export Cable Corridor

39. The onshore ECC will connect from landfall to the OCS zone and with a maximum 50km in length and a further maximum of 5km between the OCS zone and Birkhill Wood Substation. Wastes will be generated from the following construction activities:

- Excavation of trenches and installation of cable ducts;
  - Jointing bay and link box construction;
  - Trenchless installations (where required);
  - Haul road construction and removal; and
  - Temporary construction compounds:
    - Main temporary construction compounds (indicatively at four locations); and
    - Intermediate temporary construction compounds (indicatively at eight locations).
40. Excavated soils and subsoils will be stockpiled along the cable route and re-instated after the cable installation. Any subsoil or soils that cannot be re-used on site will be transferred offsite in line with the procedures set out in the Outline SWMP.
41. There are anticipated to be approximately 62 jointing bay locations and 56 link box locations along the onshore ECC. It is anticipated that all excavated soil material will be reinstated and used within the onshore ECC as part of restoration. If there are additional wastes likely to be generated during the construction activities the Principal Contractor will update the waste streams in the SWMP.
42. Trenchless crossings will be required under select rivers, roads, railways and other features as outlined in **Appendix 4.3 Crossing Schedule - Onshore**. All drilling wastes produced would be disposed of at an approved permitted waste management facility with the exact number and details of the estimated quantities of wastes developed in the SWMP based upon the Outline SWMP (Appendix B of the Outline CoCP).
43. There will be haul roads installed along the onshore ECC for use in the cable installation process and for transport of workers, plant and materials between the temporary construction compounds and along the cable route. When the cable installation is completed and the haul roads removed the topsoil will be reinstated.
44. There will be a number of temporary construction compounds along the onshore ECC. The realistic worst-case scenario would result in the onshore ECC having four main temporary construction compounds and eight intermediate temporary compounds. 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.

45. Main 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 SWMP once peak numbers of workers are known.
46. 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 included in the Outline SWMP. Further details of the types of wastes that will be generated along the onshore ECC during the construction phase are set out in **Table 19.3-5**.

*Table 19.3-5 Onshore Export Cable Corridor: Waste Types from Construction Phase*

<b>Waste Type</b>	<b>Comment</b>
<b>Inert Wastes</b>	
Soils	Stockpiled and reused within the onshore ECC during restoration works.
Subsoil	The cable laying , jointing bays and link boxes will require excavation of subsoils. Where these are not re-used along other parts of the corridor they may need to be disposed of as detailed in the Outline SWMP.
Hardcore	Haul roads along the onshore ECC 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 detailed in the Outline SWMP.
<b>Non-hazardous Wastes</b>	
Drilling fluids	Fluids from trenchless crossing locations are expected to be recycled by drilling contractors. Any excess or waste drilling fluids will be disposed of as detailed in the Outline SWMP.
Drilling solids	Solid drilling wastes from trenchless crossing locations will be collected and disposed as detailed in the Outline SWMP.
Food waste	Where food waste is collected separately at site welfare facilities it will be collected by waste contractors for treatment as detailed in the Outline SWMP.
General wastes	Mixed waste collected in bins and skips will be collected by waste contractors and treated and disposed of in line with the Outline SWMP.
Green waste	All green wastes will be processed within the onshore ECC or they may need to be disposed of as detailed in the Outline SWMP.
Concrete and rubble	All waste concrete or brick wastes will be re-used within the corridor as sub-base and in the event of excess material this will be removed as detailed in the Outline SWMP.

Waste Type	Comment
Scrap metal	All segregated scrap metal will be recycled as detailed in the Outline SWMP.
Recyclables	Other segregated materials such as plastics will be recycled offsite as detailed in the Outline SWMP.
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 as detailed in the Outline SWMP.
<b>Hazardous Wastes</b>	
Batteries, lead-acid	All lead-acid batteries will be stored and collected by waste contractor for recycling as detailed in the Outline SWMP.
Chemicals (liquid)	All waste chemicals will be stored for treatment or disposal as detailed in the Outline SWMP.
Medical / clinical waste	Small quantities of medical waste from first aid posts will be collected and removed as detailed in the Outline SWMP.
Contaminated soils	All contaminated soils will be stored and remediated onsite or removed offsite as detailed in the Outline SWMP.
Empty drums, with residues	All drums with residues will be stored and removed from site for treatment as detailed in the Outline SWMP.
Oil filters	Oil filters removed as part of plant maintenance will be stored and removed from site as detailed in the Outline SWMP.
Oily rags	All oil contaminated rags materials will be contained and removed from site as detailed in the Outline SWMP.
Used oil	Used oil will be collected and stored in line and removed from site as detailed in the Outline SWMP.
WEEE	Any waste electronic equipment will be disposed of site as detailed in the Outline SWMP.

### 19.3.8.3 Onshore Converter Station and Energy Storage and Balancing Infrastructure

47. During the construction phase wastes will be generated from the following Project activities:
- Site preparation;
  - OCS and ESBI construction; and
  - Temporary construction compounds at the OCS zone.
48. The OCS will be constructed to accommodate the connection of the Project to the transmission grid. An onward cable corridor is required to connect the OCS to the proposed Birkhill Wood Substation.
49. The OCS zone also includes the installation of ESBI that may include battery storage units, a substation and associated infrastructure. The final design has not been agreed at this stage, although this may comprise up to 50 battery energy storage system blocks, storage buildings for spares and a control room.
50. To install the foundations for the OCS and ESBI, specific areas within the zone will be levelled and if required subsoil removed. Topsoil and subsoil generated from site preparation works at the OCS zone will be retained on site where possible to be used in the site restoration and landscaping. Any excess topsoil/subsoil will be removed from the site and managed as a waste.
51. The site-based workers associated with the Project at the OCS zone during the construction, installation and commissioning will produce a range of non-hazardous and 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 SWMP.
52. Further details of the types of wastes that will be generated at the OCS and ESBI during the construction phase are set out in **Table 19.3-6**.

*Table 19.3-6 Onshore Converter Station and ESB: Waste Types from Construction Phase*

<b>Waste Type</b>	<b>Comment</b>
<b>Inert Wastes</b>	
Soils	Stockpiled and reused within the OCS zone during restoration works or removed from site where excess material cannot be reused.
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.
<b>Non-hazardous Wastes</b>	
Drilling fluids	Not applicable in the OCS zone construction areas.
Drilling solids	
Food waste	Where food waste is segregated 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 Appendix B Outline SWMP.
Green waste	All green wastes will be processed within the OCS zone construction area.
Concrete and rubble	All waste concrete or brick wastes will be used within the OCS zone. 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.



Waste Type	Comment
<b>Hazardous Wastes</b>	
Batteries, lead-acid	All lead-acid batteries will be stored and collected by waste contractor for recycling.
Batteries, lithium units	Battery storage units will be modular, no wastes will be generated during the construction phase. Any battery units unable to be commissioned will be returned to the supplier.
Chemicals (liquid)	All waste chemicals will be stored in line with the Outline 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 Outline 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 detailed in the Outline SWMP and removed for re-processing by waste contractors.
WEEE	Any waste electronic equipment will be recycled by waste contractors.

### 19.3.9 Operational Phase: Waste Types

#### 19.3.9.1 Onshore Export Cable Corridor

53. Occasional routine maintenance works will be required during the O&M 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 from these works as all excavated subsoil and topsoil will be reinstated after the remediation works and any waste arisings will be recycled or disposed to an appropriate waste management facility.

### 19.3.9.2 Onshore Converter Station and ESBI

54. The servicing of equipment at the OCS 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).
55. Battery storage units will be returned to suppliers at the end of the units operational life or upgraded. Details of any reporting requirements will be included in an Environmental Management System to meet regulatory reporting of battery returns at that time.
56. The OCS zone 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.

### 19.3.9.3 Operational Waste Management Measures

57. Personnel generating waste from the servicing and maintenance of the onshore ECC, OCS and ESBI 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).
58. An Environmental Management System detailing regulatory requirements will be put in place and implemented by all contractors and subcontractors to ensure all wastes are stored and managed in line with all legislative and reporting requirements.

## 19.3.10 Decommissioning Phase: Waste Types

59. The final decommissioning strategy of the Project's onshore infrastructure has not yet been decided. For a description of potential onshore decommissioning works, refer to **Volume 1 Chapter 4 Project Description**.
60. It is recognised that regulatory requirements and industry best practice change over time. Therefore, the details and scope of onshore decommissioning works will be determined by the relevant regulations and guidance at the time of decommissioning. Specific arrangements will be detailed in an Onshore Decommissioning Plan (see Commitment ID CO56, see **Appendix 6.3 Commitments Register**), which will be submitted and agreed with the relevant authorities prior to the commencement of onshore decommissioning works.
61. Many of the materials used to construct the Project, such as the onshore export cable will be recycled once decommissioned, and as many materials as practically possible will be recovered for reuse or recycling in line with circular economy approaches and sustainable waste management.

62. 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.

## 19.3.11 Waste Treatment and Disposal Options

### 19.3.11.1 Regional Waste Management Facilities

63. Waste management facilities for the Yorkshire and the Humber region, which are closest to the Onshore Development Area, have been identified. These facilities are likely to receive project-generated wastes due to their proximity to the source of the waste. 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 are presented below.
64. The data presented in **Table 19.3-7** to **Table 19.3-11** for 2023 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 Project 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).
65. 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 SWMP for the construction works. A range of waste management sites have been identified within 10km of the landfall and details are provided in **Table 19.3-7**.

*Table 19.3-7 Waste Sites with Permits within 10 km of the Landfill*

Site Name	Address	Site Type	Permit No.
Gransmoor Quarry - Site B	Land / Premises At, Gransmoor Lane, Harpham, Bridlington, East Yorkshire, YO25 8HZ	A5: Landfill taking Non-Biodegradable Wastes	QP3599ZF
Gransmoor Quarry	Land / Premises At, Gransmoor Lane, Harpham, Bridlington, East Yorkshire, YO25 8HZ	A5: Landfill taking Non-Biodegradable Wastes	DP3599ZJ
Gransmoor Quarry (site B)	Gransmoor Quarry, Gransmoor Lane, Harpham, East Yorkshire, YO25 8HZ	SR2010 No12: Treatment of waste to produce soil <75,000 tpy	GP3292ZU

Site Name	Address	Site Type	Permit No.
The Old Tarmac Mortar Plant	The Old Tarmac Mortar Plant, Catwick Lane, Brandesburton, East Yorkshire, YO25 8SA	S0811 No 11: Inert & excavation Waste TS + treatment	DB3404FB
Plant Pit 3	Sandsfield Farm, Catwick Lane, Brandesburton, Driffield, East Yorkshire, YO25 8SA	A4: Household, Commercial & Industrial Waste Landfill	QP3899ZW
Sandsfield Farm	Sandsfield Farm, Catwick Lane, Brandesburton, East Yorkshire, YO25 8SA	S1207 No 7: Composting in open systems	DB3103MP
Sandsfield Gravel Company Ltd	Sandsfield Gravel Company Ltd, Catwick Lane, Brandesburton, Driffield, East Yorkshire, YO25 8SB	A11: Household, Commercial & Industrial Waste T Stn	QP3299ZU
New Feeding Pasture Landfill Site	Land/ Premises At, Catwick Lane, Brandesburton, Driffield, East Yorkshire, YO25 8SA	A6: Landfill taking other wastes	RP3699ZN

### 19.3.11.2 Availability and Capacity of Regional Facilities

66. The landfill capacity in Yorkshire and the Humber is presented in **Table 19.3-9** which confirms that large capacities of both non-hazardous and inert waste are available to the Project. Even if larger quantities of soils were required to be disposed of from the onshore construction activities, suitable capacity exists within the region in the future to receive these.
67. The data in **Table 19.3-10** indicates there is sufficient incineration capacity in the region, where non-hazardous or hazardous wastes are required to be treated at these facilities.
68. The information shows that there are numerous waste management facilities providing a wide variety of waste management options within the local area. **Table 19.3-11** indicates the number of regional waste treatment and recycling sites that can be utilised by the Project. The closest permitted sites will be identified by the waste contractors responsible for managing the wastes and will be confirmed in the SWMP along with key waste requirements.

69. The current overall capacity data means that these facilities are likely to be capable of managing all of the waste types requiring off-site management that will be generated by the Project during construction and operation.
70. A SWMP based on the requirements of Outline SWMP (Appendix B of the Outline CoCP) would cover all construction works and will be produced post-consent identifying all wastes that will be generated from the Project.
71. The SWMP 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 Project generated wastes.

*Table 19.3-8 Number of Waste Management Facilities in Yorkshire and the Humber (2023)*

Site type	Number of Sites at the End of 2023	Yorkshire & the Humber Region – Permitted and Operational Waste Management Facilities
Landfill	With an environmental permit	67
	Sites that accepted waste	<b>35</b>
Land Disposal	With an environmental permit	37
	Sites that accepted waste	<b>16</b>
Incineration	With an environmental permit	33
	Sites that accepted waste	<b>15</b>
Transfer	With an environmental permit	340
	Sites that accepted waste	<b>235</b>
Treatment	With an environmental permit	305
	Sites that accepted waste	<b>252</b>
Metal Recovery	With an environmental permit	333
	Sites that accepted waste	<b>128</b>
Use of Waste	With an environmental permit	-
	Sites that accepted waste	-
<b>Total</b>	With an environmental permit at end 2023	1,115
	<b>Sites that accepted waste in 2023</b>	<b>681</b>

Source: Adapted from Environment Agency (2024)

*Table 19.3-9 Remaining Landfill Capacity in Yorkshire and the Humber: 2023 (000s cubic metres)*

Landfill Type	Sub-Region				Yorkshire and the Humber
	Former Humberside	North Yorkshire	South Yorkshire	West Yorkshire	
Hazardous Merchant	466	-	-	-	466
Hazardous Restricted	-	-	-	-	0
Non Hazardous with SNRHW cell*	1,243	-	-	-	1,243
Non Hazardous	19,685	17,930	2,952	247	40,871
Non Hazardous Restricted	-	-	-	-	0
Inert	14,590	1,243	5,623	3,410	24,866
<b>Total</b>	<b>35,984</b>	<b>19,174</b>	<b>8,575</b>	<b>3,656</b>	<b>67,389</b>

\*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. Source: Environment Agency (2024)

*Table 19.3-10 Incineration Capacity in Yorkshire and the Humber: 2023 (000s tonnes)*

Landfill Type	Sub-Region				Yorkshire and the Humber
	Former Humberside	North Yorkshire	South Yorkshire	West Yorkshire	
Hazardous Merchant	466	-	-	-	466
Hazardous Restricted	-	-	-	-	0
Non Hazardous with SNRHW cell*	1,243	-	-	-	1,243
Non Hazardous	19,685	17,930	2,952	247	40,871
Non Hazardous Restricted	-	-	-	-	0
Inert	14,590	1,243	5,623	3,410	24,866
<b>Total</b>	<b>35,984</b>	<b>19,174</b>	<b>8,575</b>	<b>3,656</b>	<b>67,389</b>

\*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. Source: Environment Agency (2024)

*Table 19.3-11 Transfer, Treatment and Metal Recycling Site Inputs in Yorkshire and the Humber:2023 (000s tonnes)*

Site Type	Sub-Region				Yorkshire and the Humber
	Former Humberside	North Yorkshire	South Yorkshire	West Yorkshire	
Hazardous waste	222	32	510	103	867
HIC	770	454	1,001	1,075	3,299
Clinical	0	-	5	17	22
Civic amenity site	114	61	63	215	452
Non Biodegradable	-	27	439	11	477
<b>Transfer Total</b>	<b>1,105</b>	<b>573</b>	<b>2,017</b>	<b>1,421</b>	<b>5,117</b>
Material recovery	1,008	78	327	2,881	4,294
Physical	2,714	697	1,496	2,015	6,923
Physico-chemical	311	56	18	89	474
Chemical	101	-	54	168	323
Composting	109	85	83	148	425
Biological	617	218	291	367	1,494
<b>Treatment Total</b>	<b>4,861</b>	<b>1,134</b>	<b>2,269</b>	<b>5,668</b>	<b>13,932</b>
Vehicle depollution	25	14	56	75	170
Metal recycling site	535	34	580	349	1,499
<b>Metal Recycling Sector Total</b>	<b>560</b>	<b>48</b>	<b>637</b>	<b>424</b>	<b>1,668</b>



## 19.3.12 Conclusion

### 19.3.12.1 Construction Phase

72. 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. Any off-site disposal of excavated material will be undertaken in consultation with the landowner/occupier and will be in accordance with the Waste Management Regulations.
73. Construction strategies will be implemented that will maximise the reuse of excavated clean materials from the cable corridor and OCS zone where practicable. Prior to construction, a Material Management Plan (MMP) will be developed which outlines where excavated non-waste materials will be reused in line with the CL:AIRE (2011) Definition of Waste Code of Practice (DoWCoP). The MMP will be provided as part of the CoCP (Commitment ID CO51, see **Appendix 6.3 Commitments Register**).
74. Containers will be provided at temporary construction compounds to collect different waste streams and allow the separate collection of dry recyclables. Wastes will be managed in line with the waste hierarchy, and where cannot be avoided shall be aligned to the most sustainable waste management option prioritising reuse and recycling and minimising disposal at landfill. Segregation of the different waste streams would ensure that the maximum amount of waste is diverted for reuse, recycling, and recovery.
75. There are sufficient facilities within the region to recycle, treat or dispose of all generated wastes.

### 19.3.12.2 Operational Phase

76. Limited operational wastes are expected to be generated from routine maintenance and servicing works at the onshore ECC and OCS zone.
77. Although the onshore ECC and OCS zone 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 O&M 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.

### 19.3.12.3 Decommissioning Phase

78. The final decommissioning strategy of the Project's onshore infrastructure has not yet been decided. It is recognised that regulatory requirements and industry best practice change over time. The Project will maximise the reuse and recycling of all materials in line with circular economy principles.

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## List of Acronyms

Acronym	Definition
CL:AIRE	Contaminated Land: Applications in Real Environments
DBD	Dogger Bank D
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero
DoWCoP	Definition of Waste Code of Practice
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ESBI	Energy Storage and Balancing Infrastructure

Acronym	Definition
ETG	Expert Topic Group
EU	European Union
IEMA	Institute of Environmental Management and Assessment
IDB	Internal Drainage Board
MMP	Material Management Plan
NPPF	National Planning Policy Framework
NPS	National Policy Statements
NSIP	Nationally Significant Infrastructure Project
Outline CoCP	Outline Code of Construction Practice
OCS	Onshore Converter Station
Outline SWMP	Outline Site Waste Management Plan
PEIR	Preliminary Environmental Information Report
SNRHW	Stable Non-Reactive Hazardous Wastes
TJB	Transition Joint Bay
WEEE	Waste Electrical and Electronic Equipment