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Shelburne Energy Farm

Construction Phase Resource Waste Management Plan

April 2026

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Shelburne Energy Farm

Construction Phase Resource Waste Management Plan

April 2026

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1 Introduction

1.1 Overview of the Proposed Development

Mott MacDonald Ireland Limited have been appointed by Gen7 Renewable Energy Limited (Gen7) to prepare and lodge planning applications to the relevant planning authorities for a renewable energy development.

Gen7 intend to apply for planning permission to construct a solar farm, battery energy storage system (BESS), which together are referred to as 'Shelburne Energy Farm'. Gen7 will also seek planning permission for a 220kV substation and associated cable connection which will connect Shelburne Energy Farm to the national grid.

This Resource and Waste Management Plan (RWMP) has been prepared on behalf of the Gen7 Renewable Energy Limited (Gen7) by Mott MacDonald in support of the planning application for or a solar farm, a battery energy storage system, and the associated 220kV substation and gird connection (hereafter "The Proposed Project").

The RWMP has been prepared in accordance with waste management guidance and principles, as outlined in Best practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (EPA, 2021).

Shelburne Energy Farm is a solar photovoltaic farm with an accompanying and co-located battery energy storage system. The solar farm will generate up to 92.68 MWp (peak [alternating current] generation under optimal conditions) of electricity while the battery energy storage system will provide 54.8MWac of electricity storage for a two-hour duration. The battery system will store the electricity generated by the solar farm.

Shelburne Energy Farm is located within a circa 121.5 hectare site in the townlands of Ballygarvan, Cloonagh and Nash, Gusserane, County Wexford. The largest solar array area - Area A, measures 65.1 hectares and contains the largest solar array and also the co-located battery energy storage system. The solar farm then extends to a further two parcels of land (Area B – ca. 39.2 hectares and Area C – ca.17.2 hectares).

All utility scale energy generation projects require a connection to the national electricity grid. For Shelburne Energy Farm this will comprise a 220kV substation and an associated 220kV 2.9km cable connection to an existing transmission overhead line (Great Island - Lodgewood 220kV circuit) in the vicinity north of Shelburne Energy Farm.

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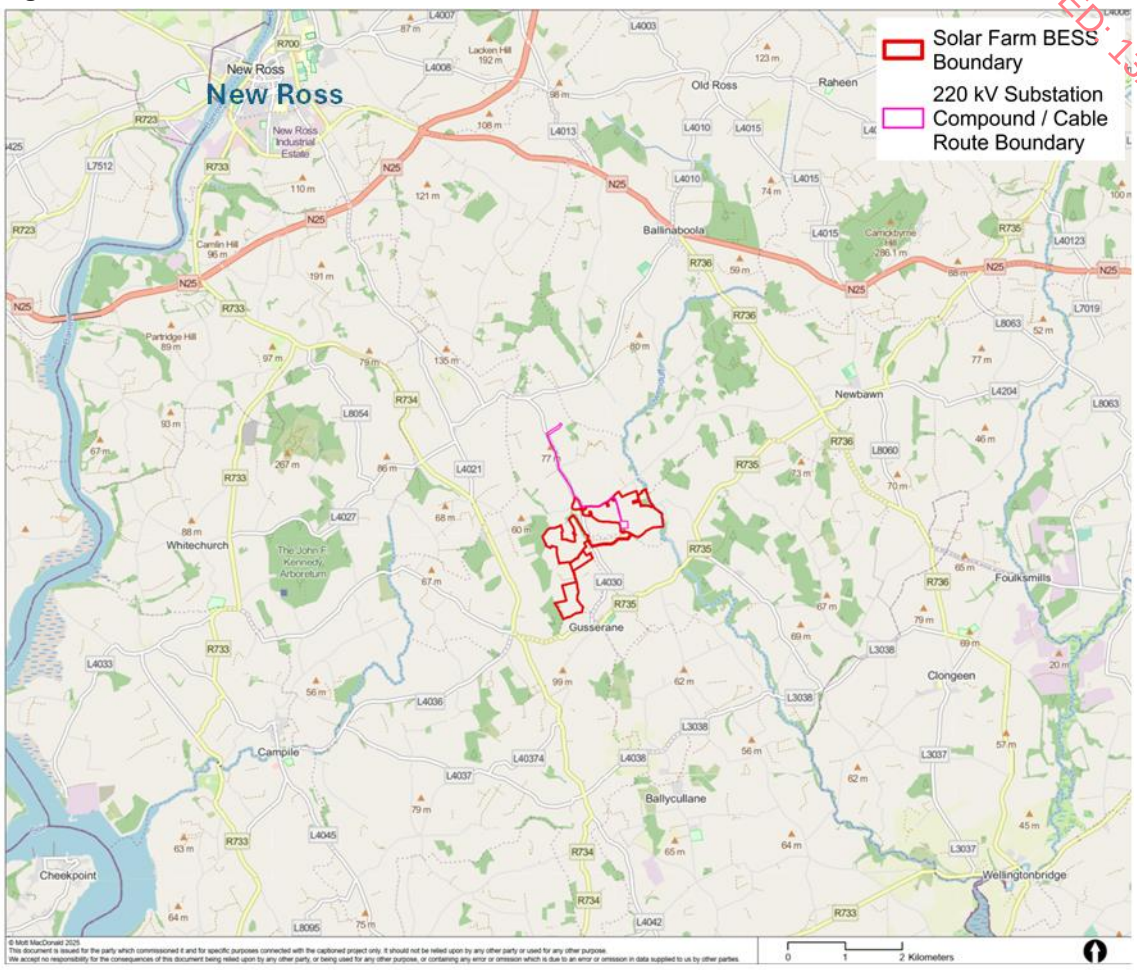
Figure 1.1: Site Location



Source: Mott MacDonald

1.2 Purpose of this RWMP

This RWMP will remain a 'live' document which will be reviewed regularly and revised as necessary and appropriate. Where the proposed development design scope is subject to change, the RWMP will be updated to reflect any changes, as necessary. The RWMP will be developed in agreement with the local planning authorities, in the context of finalising detailed design of the proposed development, to ensure that optimum levels of waste prevention, reduction, reuse, recycling, and recovery are achieved throughout the duration of the proposed development. Litter management will also be included.

Best practice suggests that the RWMP approach should be applied from the early design stages and carried forward and revised throughout the project delivery process. This ensures cost savings are maximised by considering waste minimisation initiatives and identifying opportunities to reduce, reuse or recycle waste materials and improve resource efficiency during the earliest design stage.

The requirement to develop, maintain and operate a detailed RWMP will form part of the contract documents for proposed construction works for the project.

On commencement of the project, the Contractor to undertake the works will be responsible for the development of a RWMP and the implementation of all necessary protocols and measures

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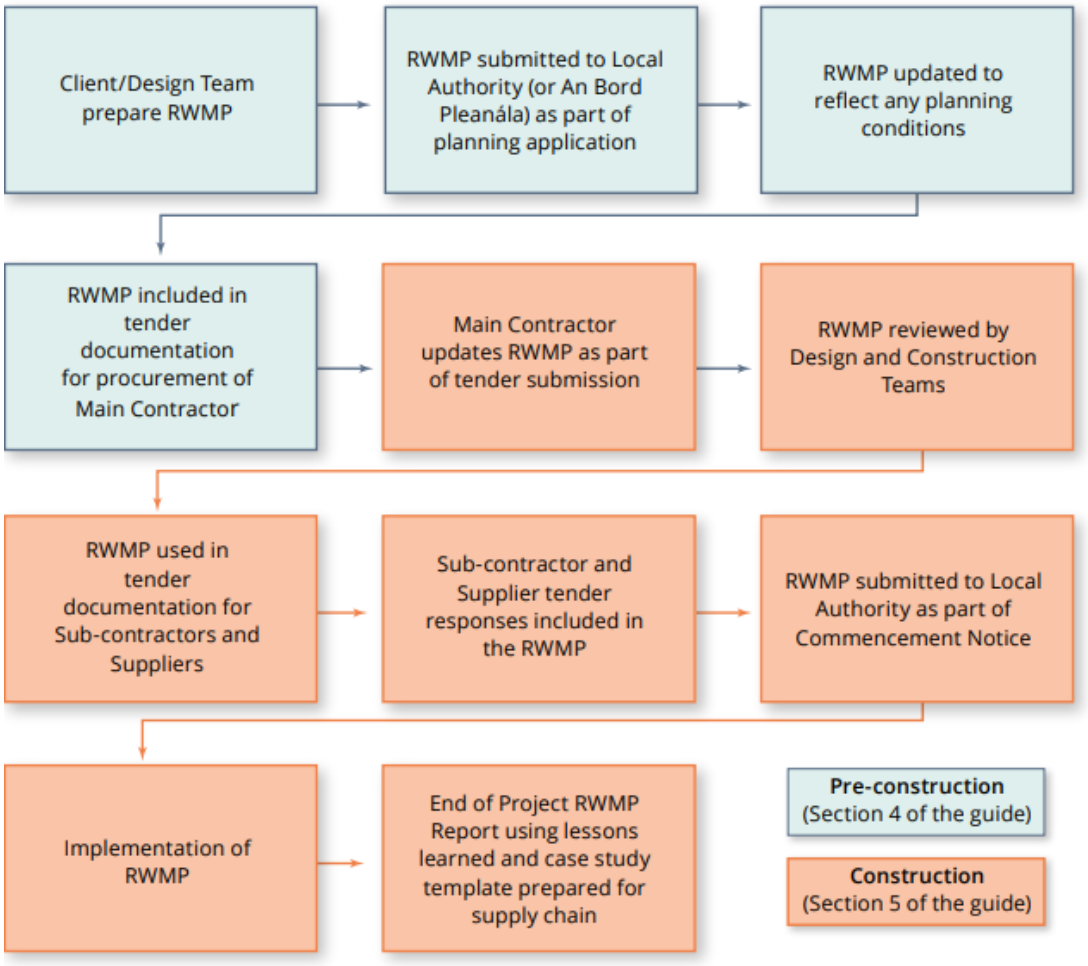
to ensure regulatory compliance, including the provision of data to local authority to enable fulfilment of reporting obligations. The RWMP will be developed and agreed in line with the process presented in Figure 1.2.

Figure 1.2: Process lifecycle of Construction Resource and Waste Management Plan



Source: Figure 3-1; Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (EPA, 2021)

The Contractor will be required to regularly revisit the RWMP throughout the lifecycle of the project so that opportunities to maximise waste reduction / efficiencies are exploited throughout, and to ensure that data is collected on an ongoing basis so that it is as accurate as possible.

The Contractor will be required to:

- Reduce the use of virgin resources;
- Keep materials in use at the highest possible value at all times and for as long as possible in the economy;
- Reduce the amount of waste generated where it cannot be eliminated completely; and
- Reuse and then recycle as much as possible, once it is not possible to reduce the waste any further.

This RWMP has been prepared for the proposed development is classified as a Tier 2 project having regard to the Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (EPA, 2021).

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This RWMP has been prepared with reference to, and taking account of, the following legislation, plans and waste management guidance documents:

- The Waste Management Act 1996 as amended and associated Regulations;
- The Litter Pollution Act 1997;
- SP133 Waste Minimisation in Construction (CIRIA, 1997);
- Design Out Waste: A Design Team Guide to Waste Reduction in Construction and Demolition Projects (EPA, 2015);
- Wexford Development Plan 2023-2029 (CDP) (Wexford County Council, 2023)
- Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (EPA, 2021); and
- Employer's Minimum Environmental Requirements for Construction and Demolition Projects and Related Works and Activities (ESB, 2023).

1.3 Structure of this RWMP

Design Out Waste (EPA, 2015) notes that the preparation of a Waste Management Plan within the early design and feasibility phases provides a framework to carry out design reviews, and should be used as an implementation, benchmarking, monitoring and reporting tool throughout the overall construction process.

This RWMP has been prepared in line with the recommendations of the Best Practice Guidelines (EPA, 2021) for Tier 2 projects and consequently addresses the following:

- Introduction
- Project description (as per the Construction Environmental Management Plan)
- Roles and Responsibilities (as per the Construction Environmental Management Plan)
- Design Approach
- Key Materials, Quantities and Costs
  - Waste forecasting: Analysis of the waste arising / materials surpluses.
  - Specific waste management objectives for the project.
  - Proposed strategies and associated costs: Methods proposed for prevention, reuse and recycling of wastes.
  - Materials logistics.
- Site Management
  - Monitoring procedures: Auditing and record keeping; and
  - Proposals for education of workforce and plan dissemination programme.
- Site Infrastructure

1.4 Irish Waste Management Targets

The EU Waste Framework Directive (Directive 2008/98/EC) sets the basic concepts and definitions related to waste management, such as definitions of waste, recycling and recovery. It also includes definitions for when waste ceases to be waste and becomes a secondary raw material (end-of-waste criteria) and how to distinguish between waste and by-products. The Directive was transposed into Irish law by the Waste Directive Regulations 2011 (S.I. No. 126 of 2011).

The EU Waste Framework Directive (2008/98/EC) required Member States to take the necessary measures to achieve the minimum recycling/recovery target of 70% by weight for

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non-hazardous C&D waste by 2020, excluding naturally occurring materials. The Directive specified that such a target should be achieved by preparing for reuse, recycling and other material recovery, including backfilling operations using waste to substitute other material. The EPA determined that Ireland achieved 85% material recovery of such waste in 2021 surpassing the 70% target[1].

The Contractor will be obliged to aim for an overall recycling rate of 70% of C&D material, in accordance with EU targets under Waste Framework Directive (2008/98/EC) as well as regional waste management targets.

1.5 Waste Management Regulatory and Policy Requirements

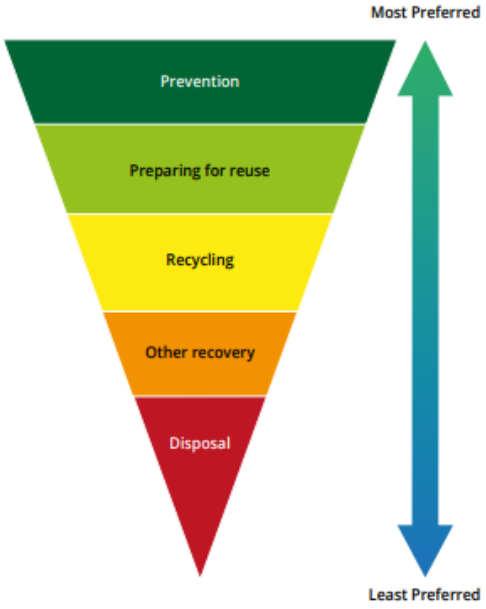
The revised legislative framework on waste (Directive (EU) 2018/851) entered into force in July 2018 and sets clear targets for reduction of waste and establishes long-term path for waste prevention and waste treatment. The Directive has been transposed into Irish law through the European Union (Waste Directive) Regulations 2020 (S.I. No. 323 of 2020).

In Ireland, the primary waste legislation is the Waste Management Act 1996, as amended, and Section 32 of the Act places a general obligation on the holder of waste to comply with legislation and ensure all wastes are managed within the requirements of the Act.

The Waste Framework Directive defines waste as *"any substance or object that the holder discards or intends to or is required to discard".*

The foundation of EU waste management is the five-step "waste hierarchy", established in the Waste Framework Directive. It establishes an order of preference for managing and disposing of waste. The Waste Hierarchy described in the framework prioritises prevention over reuse, recycling, recovery and disposal. The approach has been adopted in the EPA 2021 guidelines, as illustrated in Figure 1.3.

Figure 1.3: Waste Hierarchy



Source: EPA, 2021

[1] Construction & Demolition Waste Statistics for Ireland (Environmental Protection Agency, 2023) (accessed August 2024).

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The primary legislative instruments that govern waste management in Ireland relevant to the proposed development are as follows:

- Waste Management Act 1996 (S.I. No. 10 of 1996), as amended. Sub-ordinate legislation to this Act includes:
  - European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) as amended 2011 (S.I. No. 323 of 2011)
  - Waste Management (Collection Permit) Regulations S.I No. 820 of 2007 as amended 2008 (S.I No 87 of 2008)
  - Waste Management (Facility Permit and Registration) Regulations, S.I No. 821 of 2007 as amended 2008 (S.I No. 86 of 2008)
  - Waste Management (Licensing) Regulations 2000 (S.I No. 185 of 2000) as amended 2004 (S.I. No. 395 of 2004), 2010 and (S.I. No. 350 of 2010)
  - Waste Management (Packaging) Regulations 2003 (S.I. No. 61 of 2003) as amended 2004 (S.I. No. 871 of 2004), 2006 (S.I. No. 308 of 2006) and 2007 (S.I. No. 798 of 2007)
  - Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
  - Waste Management (Landfill Levy) (Amendment) Regulations 2012 (S.I. No. 221 of 2012), as amended 2015 (S.I. No. 189 of 2015)
  - European Communities (Waste Electrical and Electronic Equipment) Regulations 2011
  - Waste Management (Registration of Brokers and Dealers) Regulations 2008 (S.I. 113 of 2008)
  - Waste Management (Food Waste) Regulations 2009 (S.I. No. 508 of 2009), as amended 2015 (S.I. 190 of 2015);
- Protection of the Environment Act 2003 (S.I. No. 413 of 2003);
- Litter Pollution Act 1997 (S.I. No. 12 of 1997); and
- Circular Economy and Miscellaneous Provisions Act 2022 (S.I. No. 26 of 2022).

The proposed development will also comply with the Circular Economy and Miscellaneous Provisions Act 2022 and the core principles of circular economy as below[2]:

- Designing out of waste and negative externalities - Finding suitable measures to firstly avoid generating waste (prevention and minimisation), before focusing on recovering. The choice and planned use of products are considered with their end of life in mind.
- Keeping products and materials in use at the highest possible value at all times - Ensure products and materials can be kept in circulation within the economy without becoming waste. Strategies include renting rather than buying, repairing, remanufacturing, keeping products in use for longer by reusing, sharing, reselling, and ultimately recycling as a last alternative.
- Regenerating the natural ecosystem - Regenerate the natural ecosystems by returning valuable nutrients to the biosphere (soils, waters and atmosphere). Biological (or organic) materials such as wood, food and water, can be incorporated into the ecosystem and re-generated through biological processes.

[2] Ellen MacArthur Foundation (n.d.) Circular economy introduction [online] Available at: https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview Accessed December 2023

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2 Design Approach

2.1 Proposals for Managing Waste Arisings

Waste arisings will be managed in accordance with the principles outlined in the Waste Hierarchy as illustrated in Figure 1.3.

In order of priority, the Waste Hierarchy sets out the most desirable approaches to waste management in the following order:

1. Prevention
2. Reduction / Minimisation
3. Reuse
4. Recycle
5. Other Recovery (including energy recovery)
6. Disposal

Only authorised Waste Contractors with appropriate waste collection permits issued by the National Waste Collection Permit Office will be authorised to collect waste streams from the proposed development. Waste will only be transferred to facilities authorised to treat or dispose of the material in accordance with the requirements of the Waste Management Act 1996 (as amended) and associated Regulations.

Copies of all permits and licences will be retained with other waste-related documentation. Comprehensive waste descriptions will be provided on all documentation.

2.1.1 Opportunity for Prevention and Reduction

Opportunities for the prevention of waste will be considered throughout all stages of the project. The appointed Contractor will plan the construction process to eliminate / reduce waste; specifically, careful planning will minimise the volume arising on site, facilitate the use of reclaimed materials in the works and influence wastage caused by poor materials handling.

Design Out Waste (EPA, 2015) notes that 33% of all onsite waste is due to a failure to implement waste reduction measures during the design stages. Materials logistics, specifically the avoidance of overstocking of materials, is a critical factor for material optimisation in preventing wasted material. A review assessment of this plan and detailed design plans will inform the appropriate quantities of materials required for the project thereby minimising, and potentially preventing, the generation of certain waste streams. In accordance with Best Practice Guidelines (EPA, 2021) and Design Out Waste (EPA, 2015), the following measures will be implemented at a minimum.

- Materials will be ordered on an ‘as needed’ basis to prevent over-supply to site.
- Materials required will be purchased in shape, dimensions, and form that minimise the creation of excessive scrap waste on site.
- Storage and handling procedures and systems will be introduced to minimise generation of damaged materials / waste e.g. deliveries will remain unpacked until ready for use and sufficient space will be made available for manoeuvring of machinery.
- The correct sequence of operations will be determined and implemented to prevent using more materials than estimated due to damage or incorrect operation, as well as to enhance the reuse of materials onsite.

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- Agreements will be made with suppliers, where possible, to ensure take back / buy-back of surplus and sub-standard / rejected materials.
- The Contractor will assign individual responsibility (through appropriate contractual arrangements) to sub-contractors, where applicable, for the purchase of raw materials and for the management of wastes arising from their activities.

Alongside the above measures, Table 2.1 identifies additional measures that will be considered to be implemented, where appropriate, to ensure that the proposed development utilises resources efficiently and to minimise waste generated on site.

Table 2.1: Potential additional measures for waste prevention and reduction

Planning waste minimisation during construction	Waste prevention and reduction measures	Responsibility[3]	Date action commenced
Design	Ensure design considerations take into account the five principles for Resource Efficient design and circular economy: • Design for Reuse and Recovery • Design for offsite Construction • Design for Materials Optimisation • Design for Resource Efficient Procurement • Design for Deconstruction and Flexibility (for the future) • Design for Longevity • Consider standardisation and/or modulation. • Identify potential industrial symbiosis opportunities[4]	Designer/project manager	From the design outset
Construction methods	Sequencing the works such that reuse of materials can be undertaken.	Project manager /principal contractor	During design and planning stages and implemented during the construction.
	Use of prefabricated or pre-cast elements which reduce on site waste through off cuts and storage damage		
	Minimise the depth of excavation and reuse any excavated material on site or on local developments		
Materials	Assess the quantities of materials required on site.	Project manager /principal contractor	During construction planning and throughout the project construction.
	Procure from suppliers with reduced and recyclable packaging		During design and throughout the procurement/ construction stages of the project.
	Provide secure storage to minimise the generation of damaged materials/theft.		

[3] It is the responsibility of Gen7 Renewable Energy Ltd to appoint a principal contractor for the purposes of the RWMP if one or more contractors are working on this project.

[4] Providing waste or by-product from construction to another business that can utilise the material.

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Planning waste minimisation during construction	Waste prevention and reduction measures	Responsibility[3]	Date action commenced
	Keep deliveries packaged until they are ready to be used.		
	Inspect deliveries on arrival.		
	Increase the use of recycled content; this could include traditional use of recovered material such as crushed concrete waste and by procuring mainstream manufactured products with higher recycled content than their peers.		

It is expected that any waste generated will be recycled off site in accordance with the CEMP, RWMP and regulatory requirements, where feasible. Waste will only be sent for recovery or disposal if no other reasonable economically or technically feasible alternative can be found.

2.1.2 Opportunity for Reuse/ Recycling

Material that is generated will be reused on site or salvaged for subsequent reuse to the greatest extent possible or recycled. Disposal will only be considered as a last resort. Initiatives will be put in place to maximise the efficient use/reuse of materials.

Appropriate and adequate waste segregation areas will be provided at secure locations on site. The number and size of containers and the number of uplifts required will be determined at a later stage in the project. The Contractor will ensure that containers are not filled beyond the maximum loading capacity of the collection vehicle. Effective inspection, containment and control measures will be implemented to ensure that no litter escapes from the construction site. Litter pickers will be employed within the construction site as required.

2.1.2.1 Concrete

The Contractor will be encouraged to process demolished concrete to be reused as general fill.

2.1.2.2 Soils

All soil material will be tested following a waste sampling strategy. In an event that contaminated soil material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material and disposed of appropriately. The Contractor will have regard to the information collected including conceptual site modes, risk assessment and identified reuse and remediation strategies.

Soil will be reused where possible. All soil extracted (whether contaminated or not) will be stockpiled and stored appropriately at the proposed development.

2.1.2.3 Hazardous Waste

Waste fuel and oil and nominally empty containers will be appropriately contained and stored in designated areas on drip trays to prevent loss through drips and spills. Paints will be stored in appropriate containers in designated areas on drip trays. Where practicable, non-hazardous paints will be used.

Hazardous wastes will be collected by appropriately authorised Waste Contractors for recovery or disposal as appropriate. Nominally empty containers will not be sent for disposal unless a determination can be made that the residual content does not include hazardous waste.

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2.1.2.4 Scrap Metal

Scrap metal will be sent to an appropriately authorised Waste Contractor for recycling.

2.1.2.5 Unacceptable Materials

Other unusable construction waste materials will be collected in receptacles with mixed construction waste materials, for subsequent separation and recycling at an offsite facility.

2.1.2.6 Miscellaneous Waste Arisings

Small volumes of a variety of waste streams will be generated including packaging waste and mixed municipal type waste. The generation of surplus waste streams will be minimised through careful planning; however, it will not be possible to eliminate all surplus waste arisings. Where waste is produced the following separation and storage methods will be used:

- Cardboard will be flattened, and paper and cardboard containers will be covered to prevent ingress of water;
- Plastic will be segregated at source and kept as clean as possible prior to placement in a covered container; and
- Paper, cardboard and plastics will be recycled whereas mixed municipal waste arising will be sent for disposal.

2.2 Offsite Construction

Use of offsite manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). Where technically feasible and economically viable, offsite prefabricated elements (steel towers and wooden polesets) will be considered to minimise waste arisings and material assets use. Offsite prefabricated elements would allow for volumes of off-cuts and onsite breakages and the likelihood of over-ordering and wasting of materials to be reduced.

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3 Key Materials, Quantities and Cost

3.1 Analysis of Waste Arisings

The main waste stream arisings (including surplus materials) which are likely to be generated during the construction phase are presented in Table 3.1. The List of Waste (LoW) codes are identified using the EPA publication Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-hazardous (2019).

According to the publication, waste can have one of the three entry types: Non-hazardous; Hazardous (marked with an asterisk); Mirror – either hazardous or non-hazardous.

Table 3.1: Waste types and associated LoW Codes

Waste Type	LoW Code[5]	Description	Waste Classification
Concrete, bricks tiles and ceramics	17 01 01	Concrete	Non-hazardous
	17 01 02	Bricks	Non-hazardous
	17 01 03	Tiles and ceramics	Non-hazardous
	17 01 06*	Mixtures of or separate fractions of concrete bricks tiles and ceramics containing hazardous substances	Hazardous
	17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	Non-hazardous
Wood, glass and plastic	17 02 01	Wood	Non-hazardous
	17 02 02	Glass	Non-hazardous
	17 02 03	Plastic	Non-hazardous
	17 02 04*	Glass, plastic and wood containing or contaminated with hazardous substances	Hazardous
Metals (including their alloys)	17 04 01	Copper, bronze brass	Non-hazardous
	17 04 02	Aluminium	Non-hazardous
	17 04 03	Lead	Non-hazardous
	17 04 04	Zinc	Non-hazardous
	17 04 05	Iron and steel	Non-hazardous
	17 04 06	Tin	Non-hazardous
	17 04 07	Mixed metals	Non-hazardous
	17 04 09*	Metal waste contaminated with hazardous substances	Hazardous

[5] The selected List of Waste (LoW) codes provided are provisional only. In a number of instances more than one code may be considered appropriate. Care should be taken to ensure that the waste collectors permit includes all LoW codes specified in the appropriate documentation. In addition, there will be a requirement for a technically competent person to assess waste as it arises and to make a determination as to the classification of the material in accordance with the Hazardous Waste List.

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Waste Type	LoW Code[5]	Description	Waste Classification
	17 04 10*	Cables containing oil, coal, tar and other hazardous substances	Hazardous
	17 04 11	Cables other than those mentioned in 17 04 10	Non-hazardous
Soil (including excavated soil from contaminated sites), stones and dredging spoil	17 05 03*	Soil and stones containing hazardous substances	Hazardous
	17 05 04	Soil and stones other than those mentioned in 17 05 03	Non-hazardous
	17 05 05*	Dredging spoil containing hazardous substances	Hazardous
	17 05 06	Dredging spoil other than those mentioned in 17 05 05	Non-hazardous
	17 05 07*	Track ballast containing hazardous substances	Hazardous
	17 05 08	Track ballast other than those mentioned in 17 05 07	Non-hazardous
Gypsum based construction material	17 08 01	Gypsum-based construction materials contaminated with hazardous substances	Non-hazardous
	17 08 02	Gypsum-based construction material other than those mentioned in 17 08 01	Non-hazardous
Other construction and demolition wastes	17 09 01	Construction and demolition wastes containing mercury	Non-hazardous
	17 09 02*	Construction and demolition wastes containing PCBs	Hazardous
	17 09 03*	Other construction and demolition wastes (including mixed wastes) containing hazardous substances	Hazardous
	17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	Mirror non-hazardous

Note: The table may be subject to change in the construction phase content review.

3.2 Waste Management Targets

The Contractor will be obliged to aim for an overall recycling rate of at least 70% of C&D material (exact target to be confirmed), in accordance with EU targets under Waste Framework Directive (2008/98/EC) as well as regional waste management targets. Waste management targets for anticipated waste arisings regarding reuse / recycling / recovery and disposal rates will be confirmed by the appointed Contractor.

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3.3 Waste Management Costs

3.3.1 Financial Cost Associated with Waste

The total cost of implementing the RWMP will have to consider costs such as, handling, storage, transportation, revenue from rebates and disposal costs.

3.3.2 Reuse / Recovery

Reusing of materials on site will reduce disposal costs. Inert soils, gravel and stones which cannot be reused on site may be classified as a by-product (under Article 27 of the 2011 Waste Directive Regulations). This material may be used as capping material subject to approvals by the EPA. This material is often taken free of charge for such purposes, or when used as capping in landfills will not attract the landfill tax levy, thereby reducing final waste disposal costs.

3.3.3 Recycling

All metals are recyclable and can earn a rebate which can offset collection and transportation costs. Clean, uncontaminated cardboard and certain hard plastics can be recycled. Waste Contractors will charge considerably less to take segregated wastes such as recyclable waste from a site than mixed waste. Timber can be recycled as chipboard.

If wastes are segregated, Waste Contractors typically charge considerably less as sorting and processing costs are reduced.

3.3.4 Disposal Charge

The total cost of waste management associated with the proposed development will be calculated in regard to the purchase costs of materials, handling costs, storage costs, transportation costs, revenue from sales, disposal costs etc. Costs will be recorded for the range of C&D materials and waste arising.

A template for the recording of costs is provided in Table 3.2. This record will be live and will be developed as the project progresses.

Table 3.2: Indicative costs breakdown for waste management template

Waste Type	Estimated Quantity (Tonnes)	Estimated Cost (€/tonnes)
Quantity of Material – Excavated		
Quantity of Material- Excluding Excavation		
Quantity of Material Reused		
Purchase Cost		
Materials Handling Costs		
Material Storage Costs		
Material Transportation Costs		
Material Treatment Costs		
Total Waste Management Cost		
Unit Waste Management Cost		

Note: The table is subject to change during the construction phase.

Waste sent off site for disposal will only be conveyed by an authorised Waste Contractor and transported from the proposed development to an authorised permitted site of recovery / disposal in a manner which will not adversely affect the environment. A letter of acceptance

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from a licensed facility will be required prior any waste being removed from the proposed development. All employees will be required to comply with the obligations under the RWMP.

3.4 Waste Treatment and Disposal Options

The National Waste Management Plan for a Circular Economy states that in 2021 there were total 474 soil recovery facilities in Ireland (16 licenced, 230 permitted, 228 registered). The total remaining available treatment capacity for soil waste from 2022 was calculated to be approximately 32.8Mt.[6]

There are three facilities in Ireland (excluding Tara Mines now closed) accepting inert waste, including one in County Dublin (W0129-03). There is only one landfill in Ireland that currently accepts non-hazardous soil and stone, Corranure Landfill (W0077-04), located in County Cavan.[6]

Information on the permitted capacity of waste management facilities has been used in the assessment, based on current publicly available information at the time of submission. However, it should be noted that the capacity information obtained from the EPA for the sites and regions identified does not necessarily mean that the capacity detailed would be available for use by the proposed development.

C&D waste is recovered at EPA licensed landfills and Local Authority permitted sites, and those relevant to the study area are listed in Table 3.3 and Table 3.4 respectively.

Table 3.3: EPA Waste Management Licensed Facilities in County Wexford

Active Licence No.	Facility Type	Name of the Facility	County	Location
W0123-01	Composting/Anaerobic Digestion	Custom Compost	Co. Wexford	Custom Compost, Ballyminaun Hill, Gorey, Co Wexford, Wexford.
W0016-02*	Landfill	Killurin Landfill Site	Co. Wexford	Newtown Lower, Killurin, Wexford
W0191-02*	Landfill	Holmestown Waste Management Facility	Co. Wexford	Barntown, Wexford, Wexford.
W0220-01*	Waste Transfer Station	Starrus Eco Holding Limted	Co. Wexford	Ramstown, Gorey, Wexford.
W0229-01	Waste Transfer Station	Bord Na Móna Recycling Limited	Co. Wexford	Ballygillane Big/Ballyknockan, St. Helens, Kilrane, Rosslare Harbour, Wexford.
W0258-01	Waste Transfer Station	Murray Waste Recycling Limited	Co. Wexford	Coolatore, Ferns, Wexford.
W0280-01	Soil Recovery Facility	Brownswood Inert Waste Recovery Facility	Co. Wexford	Brownswood, Enniscorthy, County Wexford, Wexford.
W0111-02	Waste Transfer Station	South East Recycling Company Limited	Co. Wexford	South East Recycling Company Ltd, South East Recycling Centre, Carrigbawn, Pembrokestown, Wexford.

[6] National Waste Management Plan for a Circular Economy - Volume I: Current Situation and Challenges (Regional Waste Management Planning Offices, 2024) (accessed August 2024)

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*Waste Licence now deemed Industrial Emissions Licence

Source: EPA Licence portal (2024)[7]

Table 3.4: Local Authority Authorised Waste Facilities within Wexford County Council Administrative Area

Authorisation No.	Name of Facility	Local Authority
COR-WX-15-0086-01	R & W Kelly Limited	Wexford County Council
COR-WX-14-0079-01	J. Ryan Haulage Ltd	Wexford County Council
WFP-WX-15-0089-01	Sutton Plant Hire (Wexford) Limited	Wexford County Council
WFP-WX-16-0098-01	Sutton Plant Hire (Wexford) Limited	Wexford County Council
WFP-WX-16-0102-01	Molloy Metals Recycling Limited	Wexford County Council
WFP-WX-16-0104-01	Newtown Sand & Gravel Limited	Wexford County Council
WFP-WX-16-0105-01	James Tompkins (Garage) Ltd	Wexford County Council
COR-WX-16-0117-01	Biogrease Solutions Ltd	Wexford County Council
WFP-WX-16-0111-01	Malcolm Rothwell	Wexford County Council
WFP-WX-16-0116-01	Hudson Concrete Ltd	Wexford County Council
WFP-WX-16-0114-01	Wexford Car Dismantlers	Wexford County Council
WFP-WX-16-0121-01	Ire-Wel Pallets Ltd	Wexford County Council
WFP-WX-17-0126-01	MSK Silversands Ltd	Wexford County Council
WFP-WX-17-0127-01	Rothwell Contracting Ltd	Wexford County Council
WFP-WX-16-0103-01	Anthony Byrne and Francis Byrne	Wexford County Council
WFP-WX-17-0123-01	Sammon Contracting Ireland Ltd	Wexford County Council
WFP-WX-17-0124-01	Sutton Plant Hire (Wexford) Ltd	Wexford County Council
WFP-WX-17-0125-01	Sutton Plant Hire (Wexford) Ltd	Wexford County Council
COR-WX-17-0131-01	Hennessy Plant Hire	Wexford County Council
COR-SS-WX-16-0106-01	Enva Ireland limited	Wexford County Council
COR-WX-16-0118-03	Hennessey Plant Hire	Wexford County Council
WFP-WX-17-0134-01	R & W Kelly Ltd	Wexford County Council
COR-WX-18-0135-01	Ardinagh Construction & Waste Ltd	Wexford County Council
WFP-WX-18-0141-01	Shane Cadogan Plant & Civil Engineering	Wexford County Council
COR-WX-18-0137-01	BAM Civil Ltd	Wexford County Council
WFP-WX-18-0143-01	Tamer Metal Recycling Ltd	Wexford County Council
WFP-WX-18-0142-01	Michael Murphy	Wexford County Council
WFP-WX-18-0140-01	Donohoe Motor Salvage Ltd	Wexford County Council
COR-WX-18-0139-01	Measure 2 Build Ltd	Wexford County Council
COR-WX-16-0115-04	Murphy Recycling & Aggregates Ltd	Wexford County Council
COR-WX-18-0144-01	Hennessy Plant Hire	Wexford County Council
COR-WX-18-0147-01	Environmental Compaction Systems (ECS) Limited	Wexford County Council
WFP-WX-17-0129-02	M&T Plant Hire Limited	Wexford County Council
COR-WX-19-0152-01	Kollect on Demand Ltd	Wexford County Council
WFP-WX-19-0151-01	Pure Oil Limited	Wexford County Council
COR-WX-19-0153-01	Bizzy Binz Ltd	Wexford County Council
COR-WX-19-0155-01	Sean Kinsella Site Developments Ltd	Wexford County Council
COR-WX-19-0150-01	Kollect on Demand Ltd	Wexford County Council

[7] EPA Licence Portal (Environmental Protection Agency, 2024) (accessed August 2024).

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Authorisation No.	Name of Facility	Local Authority
COR-WX-19-0149-01	Environmental Compaction Systems Ltd	Wexford County Council
COR-WX-19-0157-01	Environmental Compaction Systems Ltd	Wexford County Council
WFP-WX-19-0158-01	Ned Murphy Tractors Ltd	Wexford County Council
WFP-WX-19-0160-01	WRM Investments Ltd	Wexford County Council
WFP-WX-19-0159-01	WCDA Recycling 2000	Wexford County Council
COR-WX-19-0162-01	Kollect On Demand Ltd	Wexford County Council
COR-WX-19-0163-01	Environmental Compaction Systems Ltd	Wexford County Council
COR-WX-19-0164-01	Environmental Compaction Systems Ltd	Wexford County Council
COR-WX-19-0165-01	C&D Recycling Kavanagh Ltd	Wexford County Council
COR-WX-19-0167-01	Kollect on Demand Ltd	Wexford County Council
WFP-WX-19-0168-01	Andrew Byrne	Wexford County Council
WFP-WX-20-0173-01	Sean Kinsella Site Developments Ltd	Wexford County Council
COR-WX-20-0171-01	Doyle's Garage Courtown Ltd	Wexford County Council
WFP-WX-20-0172-01	Drumderry Aggregate Ltd	Wexford County Council
WFP-WX-20-0174-01	R&E Warren Quarry Ltd	Wexford County Council
WFP-WX-20-0176-01	Johnny Murphy	Wexford County Council
WFP-WX-20-0177-01	Patrick Skelton	Wexford County Council
WFP-WX-20-0017-03	Mulligan Dismantling & Salvage Ltd	Wexford County Council
WFP-WX-20-0012-03	Ardinagh Construction & Waste Ltd	Wexford County Council
WFP-WX-20-0076-02	Bernard Byrne Combines Ltd	Wexford County Council
WFP-WX-20-0007-03	Ferrycarrig Autobody Repairs Ltd	Wexford County Council
COR-WX-20-0184-01	Niall Barry & Co. Ltd	Wexford County Council
WFP-WX-21-0181-01	Tamer Metal Recycling Ltd	Wexford County Council
WFP-WX-20-0178-01	Paul Lancaster Sales & Recovery Ltd	Wexford County Council
WFP-WX-20-0099-02	C&D Recycling Kavanagh Ltd	Wexford County Council
COR-SS-WX-19-0169-01	Enva Organics Ltd	Wexford County Council
COR-WX-19-0169-01	Joan O'Sullivan	Wexford County Council
WFP-WX-20-0175-01a	Ballyshannon Recycling Ltd	Wexford County Council
		Wexford County Council

Source: National Waste Management Plan for a Circular Economy - Volume II: Supporting Documentation (Regional Waste Management Planning Offices, 2024)[8]

It is noted that any future changes to this permitted capacity are uncertain, as there is potential for change to permitted capacities, opening of additional waste management facilities and closure of existing facilities. However, it is not currently possible to predict the timeframes for when these waste management facilities will be available/unavailable and, therefore, how many of these sites would be available to accommodate waste arisings from the proposed development.

Landfill is the disposal method considered the last resort for waste management. Currently there are three operational landfill sites in Ireland which accept C&D wastes, one of which is an EPA licensed landfill site currently operational in County Clare. They are listed in Table 3.5 below.

[8] National Waste Management Plan for a Circular Economy - Volume II: Supporting Documentation (Regional Waste Management Planning Offices, 2024) (accessed August 2024)

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Table 3.5: EPA Licensed Landfills

Active Licence No.	Facility Type	Name of the Facility	Location	Capacity of C&D waste for disposal/recovery (Maximum tonnes per annum)	Additional notes
W0146-01	Landfill	Knockharley Landfill Limited	Knockharley Landfill, Knockharley, Navan, (Includes Townlands of Tuiterath & Flemingstown), Meath.	285,000[9]	Capacity for 25,000 tonnes per annum of C&D waste for recovery[10]
W0165-02*	Landfill	Ballynagran Residual Landfill Co. Wicklow	Ballymurtagh Landfill Facility, Ballymurtagh, Ballygahan Upper, Ballygahan Lower, Tinnahinch, Wicklow.	112,500[11]**	Capacity of 28,000 tonnes per annum of C&D waste for recovery[10]
W0109-02*	Landfill	Drehid Waste Management Facility Co. Kildare	Inagh Landfill, Ballyduff Beg, Inagh, Clare.	2,000[12]	No C&D waste disposal and limited waste for the purpose of daily cover, site construction and landfill restoration[12 10]

Source: EPA 2023[9], 2022[10] and 2013[11,12]

Note: *Waste Licence now deemed Industrial Emissions Licence

**Figure does not include household waste capacity

[9] Industrial Emission Licence – Knockharley Landfill Limited (Environmental Protection Agency, 2023) (accessed August 2024)

[10] Waste Infrastructure in Ireland (Environmental Protection Agency, 2022) (accessed August 2024)

[11] Environmental Protection Agency (2013) Industrial Emission Licence – Ballynagran Residual Landfill [online]. Available at: https://epawebapp.epa.ie/terminalfour/ippc/ippc-view.jsp?regno=W0165-02. Accessed January 2024.

[12] Environmental Protection Agency (2013) Industrial Emission Licence – Drehid Waste Management Facility [online]. Available at: https://epawebapp.epa.ie/terminalfour/ippc/ippc-view.jsp?regno=W0109-02. Accessed January 2024.

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4 Implementation of the RWMP

This section outlines the key practice of the implementation of RWMP including training delivered to site personnel, record keeping and communications, and waste auditing.

4.1 Site Personnel

All site personnel will be instructed about the objectives of the RWMP and informed of the responsibilities to effectively implement the plan. Where waste prevention, source segregation, material reuse techniques, and best practice guidelines apply, each member of staff will be given instructions on how to comply with the RWMP.

Roles and responsibilities of Resource Manager, Contractor and other key personnels have been detailed in the CEMP.

4.2 Training

Copies of the RWMP will be made available to all relevant personnel on site. The Resource Manager will arrange for all site personnel to receive training on the objectives of the plan and materials management. The topics to be covered will include:

- Project programme and requirements.
- Project commitments and targets.
- Health and safety requirements.
- Materials to be segregated.
- Segregation systems and protocol.
- Arrangements for the storage and handling of reusable materials and recyclables.
- Instruction on hazardous wastes and the dangers of each hazardous waste.
- Document control requirements.

Toolbox talks on resource management will be provided on a regular basis to ensure that site personnel are aware of the resource management practices associated with their work and the appropriate control measures that are required to carry out their work in compliance with this RWMP.

4.3 Record Keeping and Communications

A system will be developed to ensure that all details of generation, movement and treatment of C&D waste is recorded. Where practicable, a computerised monitoring tool will be employed to assist in facilitating waste reduction via benchmarking. As such, this system will enable the Contractor to measure and record the quantity of waste generated and identify wastage more readily as well as identify successes or failures as measured against performance targets. An indicative template is provided in Chapter 6 of this RWMP.

Verifiable and validated tracking and authorisation documentation will be maintained for all wastes destined for reuse, recovery, recycling, other recovery (including energy recovery) or disposal. Justification will also be provided where a disposal option has been employed.

In addition, a record will be kept of all materials as they arrive on site detailing the assignment of specific uses within the works. This will enable the monitoring of the quantity and type of waste produced at various stages throughout the project.

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All waste material will be managed in accordance with the Waste Management Act 1996 (as amended) and associated Regulations e.g., all hauliers will hold waste licences and/or Certificates of Registration (COR) for the specified LoW codes and the appropriate local authority at the final destination. Waste will only be sent to facilities authorised to accept, treat and / or dispose of the material. Copies of all waste accreditations relevant to the waste treatment / collection will be retained with other waste records.

Additionally, waste records will be reported on annual basis to EPA as part of the Annual Environmental Report required for the IE Licence and reported for the purpose of the Pollutant Release and Transfer Register (under the Pollutant Release and Transfer Regulation (EC) No 166/2006), where relevant.

4.4 Communications

The Resource Manager will be responsible for internal reporting of resource statistics to the Employer. This will include performance relative to agreed targets and objectives which will be included as an agenda item at site meetings.

The Resource Manager will engage with Wexford County Council and the EPA on any site inspection or enforcement audits undertaken at the site. All follow-up actions and corrective actions will be logged and reported to Wexford County Council.

The Resource Manager will engage with other stakeholders (the public, etc.) as appropriate in relation to the resource management on site.

Upon completion of construction, the Resource Manager will prepare a final report summarising the outcomes of resource management processes adopted, the total reuse and recovery figures and the final destinations of all resources taken off-site. This report will be issued to the Employer and Wexford County Council.

4.5 Waste Auditing

The effectiveness of this plan, and its implementation, will be subject to routine audits by the Resource Manager throughout the duration of the project. The purpose of the waste audit is to highlight the problems that waste can cause and the benefits of prevention and minimisation.

The audits will focus on material inputs to the project (assignment of materials to specific uses within the works) and the waste outputs for each operation, identifying additional opportunities for waste reduction, reuse and recycling. The audits will also investigate the operational factors and management policies that contribute to the generation of waste and identify appropriate corrective actions, where necessary.

The audit findings will reflect the success or failure of reaching performance targets and subsequent Action Plans will be developed to address any issues and highlight corrective actions that may be taken in relation to management policies or site practices in order to bring about further waste reductions. Inspections of the waste storage areas will be undertaken on a weekly basis, issues relating to housekeeping, inappropriate storage and / or segregation will be actioned at the earliest practicable opportunity.

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5 Site Infrastructure

Measures associated with onsite signage, separation, and storage for handling and managing of waste and resources that will be implemented are listed below.

- Prior to construction, the site layout will be reviewed by Gen7 Renewable Energy Ltd to ensure that the proposed Waste Storage Areas (WSAs) have adequate space for storage and handling.
- WSAs include stockpiles, skips or secure containers for hazardous materials. All WSAs will be assessed as fit for purpose and suitably contained, or bunded as require.
- The WSA will be set out to reduce any potential impact on sensitive human or natural environments and a suitable buffer will be applied to mitigate any impact.
- Labelling and signage will be used onsite to inform personnel of key WSA requirements and restrictions, with clear signage provided on all WSAs.
- Signage will provide information to assist good resource practice across the site.

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A. Construction Resource and Waste Inventory Template

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Table A.1: Construction Resource and Waste Inventory template

LoW Code		Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered [13] (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 01 Concrete, bricks tiles and ceramics	17 01 01	Concrete								
	17 01 02	Bricks								
	17 01 03	Tiles and Ceramics								
	17 01 06*	Mixtures of or separate fractions of concrete bricks tiles and ceramics containing hazardous substances								
	17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06								
17 02 wood, glass and plastic	17 02 01	Wood								
	17 02 02	Glass								
	17 02 03	Plastic								
	17 02 04*	Glass, plastic and wood containing or contaminated with hazardous substances								
17 04 metals (including	17 04 06	Tin								
	17 04 07	Mixed Metals								
	17 04 09*	Metal waste contaminated with								

[13] Recovery includes energy recovery, backfilling and other recovery.

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LoW Code		Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered [13] (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
their alloys)		hazardous substances								
	17 04 10*	Cables containing oil, coal, tar and other hazardous substances								
	17 04 11	Cables other than those mentioned in 17 04 10								
17 05 soil (including excavated soil from contaminated sites), stones and dredging spoil	17 05 03*	Soil and stones containing hazardous substances								
	17 05 04	Soil and stones other than those mentioned in 17 05 03								
	17 05 05*	Dredging spoil containing hazardous substances								
	17 05 06	Dredging spoil other than those mentioned in 17 05 05								
	17 05 07*	Track ballast containing hazardous substances								
	17 05 08	Track ballast other than those mentioned in 17 05 07								

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LoW Code		Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered [13] (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
17 08 gypsum based construction material	17 08 01	Gypsum-based construction materials contaminated with hazardous substances								
	17 08 02	Gypsum-based construction material other than those mentioned in 17 08 01								
17 09 other construction and demolition wastes	17 09 01	Construction and demolition wastes containing mercury								
	17 09 02*	Construction and demolition wastes containing PCBs								
	17 09 03*	Other construction and demolition wastes (including mixed wastes) containing hazardous substances								
	17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03								
Other resources and wastes		Other resources (non-waste materials) (specify as needed)								

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LoW Code	Description	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (waste)	Recovered [13] (tonnes) (waste)	Disposed (tonnes) (waste)	Unit Cost Rate (€/tonne)	Total Cost (€)
	Other wastes (specify as needed)								

Note: The table is to be completed during the construction phase.

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