



RESOURCE & WASTE
MANAGEMENT PLAN

ESB COOLNABACKY 400KV
SUBSTATION CIVIL WORKS

Aaron McEvoy

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1.0 Introduction

1.1 Purpose and Objectives of the RWMP.

This document presents the Resource and Waste Management Plan (RWMP) for the for control, management and monitoring of resources and waste associated with the civil engineering and building works for Coolnabacky 400kV / 110kV Substation on behalf of ESB Engineering & Major Projects.

This Plan has been developed specifically for this project and outlines construction practices and waste management measures which will be implemented during the construction phase, to ensure that the project is constructed in accordance with best practice, minimising the impact on the surrounding environment. The purpose of the R&WMP is to determine how the construction phase will comply with the specified requirements including contractual, regulatory, statutory and planning conditions.

Kilwex are committed to comply with:

- All relevant EU, national and local waste policies and legislation. See Section 1.4 for list of relevant legislation.
- The Kilwex environmental policy and the requirements of our ISO14001 certified Environmental Management System.
- ESB environmental and waste policies.

1.2 Resource Targets

To outline the project-specific resource targets which should be set by the Client at the outset to the project. As per the EPA Guidance “the responsibility for setting any project target lies with the Client who may dictate the appropriate performance specification for the project”. A key target for this project shall be to have a waste diversion (from landfill) goal of 90% for the overall project waste removed from site.

1.3 Supporting Documentation

All works shall take place in accordance with the requirements this plan and additional relevant complementary documents such as:

- Construction & Environmental Management Plan (CEMP).
- Project Safety and Health Plan.
- ESB document: ‘Employer’s Minimum Environmental Requirements for Construction and Demolition Projects and Related Works and Activities’.
- EPAs ‘Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects’.
- Relevant Planning Conditions.

1.4 Relevant Legislation

List of relevant waste management legislation that shall be complied with at all times:

Title of Legislation:
Waste Management Act 1996 (No. 10 of 1996) as amended 2001 (No. 36 of 2001), 2003 (No 27 of 2003) and 2011 (No. 20 of 2011).
Waste Management (Collection Permit) Regulations 2007 as amended.
Environmental (Misc. Provisions) Act (2011)
EU Regulation No. 1143/2014 on the Prevention and Management of the Introduction and Spread of Invasive Alien Species
Department of Environment and Local Government (DoELG) Waste Management – Changing Our Ways, A Policy Statement (1998).
Department of Environment, Communities and Local Government (DoECLG), A Resource Opportunity - Waste Management Policy in Ireland (2012).
Department of Environment, Heritage and Local Government, Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and

Title of Legislation:

Demolition Projects (2006).
Environmental Protection Agency, 2021. Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects.
European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) as amended 2011 (S.I. No. 323 of 2011) and 2016 (S.I 315 of 2016).
Environmental Protection Agency, 2018. List of Waste & Determining if Waste is Hazardous or Non-hazardous. Waste Classification.
EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Table 1 Relevant Legislation

1.5 R&WMP Review

The RWMP is a live document and will be reviewed on a monthly basis to ensure that it reflects the activities on site and will be updated when required. At project completion the RWMP will receive a final update with project waste levels compared to those predicted and lessons learnt noted.

Rev.	Date	Summary of amendments made:	Reviewed by:
01	18/01/23	Initial version.	Kilwex Ltd.
02	31/03/23	Format of Plan amended to align with EPA 'Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects'. Content updated to reflect feedback on initial plan, project information and content of the project CEMP.	Warren Donnelly / Aaron McEvoy
03	05/05/23	Further general revisions following project team review.	Kilwex Ltd.

Table 2 Review Table

2.0 Project Description

2.1 Project Name

ESB Coolnabacky 400kV Substation Civil Works.

2.2 Site Location

The substation will be constructed in a 6.7-hectare field in the townland of Coolnabacky near the village of Timahoe, Co. Laois. It is approximately 2km from the town of Timahoe and 15km from Portlaoise. It is set the middle of a rural area adjacent to overhead ESB powerlines:

2.3 Site Description

The site comprises mainly grassland and is enclosed by watercourses and hedgerows. A gravel track is present along the southern boundary as well and from the southwest corner of the site up along the western boundary. The wider area is dominated by agricultural land (mainly improved grassland). Tufa formations within the watercourse along the western boundaries of the site have been identified. This watercourse eventually discharges to the river Barrow and river Nore cSAC / pNHA some 4.7 km northeast. Figure 1 shows site location.



Figure 1 Map of Coolnabacky Site

2.4 Proposed Development

The permitted development consists of the following:

- 110kV GIS building
- 400kV GIS building
- 2 no. transformers positioned in bund enclosures.
- Associated compound and all other infrastructure contained within.

The 400kV substation build is a 64m x 15.3m x 12m building equipped with 8 bays consisting of 2No. Lines, 1No. from Moneypoint and 1No. Dunstown, 2No. transformers and 4No. spare bays for future proofing the build.

Some of the following are features included in the build:

- Building will house the 400kV switchgear (electrical equipment)
- The build will be carried out off of a waterproofed cast in-situ raft foundation.
- Cast in situ walls will be formed above first floor level, with the remainder cladded in an insulated panel. Steel frame will be built off of top of wall forming remainder of structure.
- Cavity wall formed with rubble stone exterior, cavity and insulation.
- Precast first floor and roof slabs will be utilised in conjunction with screed on top.
- Roof will be insulated and formed in a tapered insulation.
- Gantry cranes will be provided by a specialist engineering supplier.

The 110kV substation build is a 50m x 11.5m x 12m with 8 bays consisting of 3 no. lines Athy, Portlaoise and Ballyragget, 2 no. transformers and 3 spare bays for future development.

Some of the following are features included in the build:

- Building will house the 110kV switchgear (electrical equipment).
- The build will be carried out off of a waterproofed cast in-situ raft foundation.
- Steel frame structure build off subfloor, used to hold precast and insulated panels in place.
- Composite first floor with additional reinforced structural screed on top.
- Precast insulated concrete sandwich panels extending above first floor with an insulated cladding panel above.
- Precast insulated sandwich panel will be faced with a stone slip system.
- Insulated panel for roof with preformed gutter attached.
- Gantry cranes will be provided by a specialist engineering supplier.

2.5 Details of project programme and phasing.

Anticipated Start Date: TBC 2023

Completion Date: TBC 2024

2.6 Site history

The initial use of the site was for agricultural purposes, mainly for the grazing of livestock. Adjacent properties are currently being used for both livestock and arable farming. The site is drained by an existing river on 3 sides. Bund 1 to be formed during 110kV build is partially formed from pre-existing works.

Some construction has occurred on site. Remains of haul roads can be seen, silt fencing around existing stockpiles and minor berms where material has been gathered can be found. The condition of the site is extremely overgrown and so pathways will need to be stripped to safely navigate the site. Existing materials can be seen in various places around the site such as stakes and ESB pylon steel.

For the most part, existing stockpiles have returned to nature with grass material preventing them from being eroded by run off except 1No. stockpile. Adjacent properties have suffered extensive erosion from hills on lands as they have been reclaimed and regraded. The soil is very sandy in condition causing this.

2.7 Details of any site clearance

The following are examples of vegetation removal:

- Topsoil stripping or other excavations to enable works.
- Excavation for raft foundations both builds.
- Excavation for settlement ponds.
- Drainage and duct install.

All excavated spoil is to remain on site and stored in berms, which form part of the permanent works. This, then will be silt fenced, with a French drain placed around each stockpile, draining water from stockpiles to the settlement ponds being discharged into the perimeter river. Construction wastes will be segregated and collected by a licenced waste contractor. See section 7.2 for further information.

2.8 Description of construction elements

The following is a description of the building works to ensue in Coolnabacky:

- The 400kV indoor substation building with dimensions of 64m x 15.3m x 12m will be equipped with 8 bays ,2 no. lines from Moneypoint and Dunstown, 2 no. transformers, 4 spare bays.
- The foundation consists of an 800mm raft foundation with insulated screed poured on top.
- Cast in situ walls are built off the foundation slab to carry the steel frame. It is erected on top of the walls.
- Façade finishes include precast sandwich panels approximately 60% up the side of the building, insulated Kingspan panels, rubble stone walls and face fixed stone slips. Precast stair walls and flights are to be utilised within. Internal walls are to be of a fair-faced blockwork. Stairs are to be capped with precast to prevent migration of fire and maintain safe egress from the building.
- The roof consists of precast material with an insulation laid to falls placed on top of a 75mm topping on the roof.
- The 110kV indoor station with building dimensions 50m x 11.5m x 12m will also be equipped with 8 bays ,3 no. lines Athy, Portlaoise, Ballyragget, 2 no. transformers and 3 spare bays. This build again has an 800mm thick raft foundation built on layers of stone. Ground floor is insulated. The steel is built coming off of the raft foundation. Façade in this case is an insulated concrete sandwich panel around the perimeter with a Kingspan insulated sheet around the perimeter.
- The roof consists of an insulated Kingspan panel. Stair flights and stair walls are to be precast with internal walls being of a fair-faced blockwork.
- For both builds, storm water is managed by sediment ponds being installed to take storm water discharge from the roof. This in turn will be discharged to the local river once free from suspended solids. The main entrance road is to be surfaced with limited landscape and shaping to be undertaken on the side embankments.
- Ducting is to be installed from pylons to substation buildings and from transformers to substations. 1 No. foul tank is to be placed to take foul water from building with an adjacent water tank to be maintained to hold water in the event of fire. The entire ESB compound site is also to be fenced, ensuring security within the facility. A firefighting storage tank is to be installed also.
- The compound will be stoned up in the fenced area. There will be an existing stone road making access to site to be extended and tarred to access buildings also.

2.9 Material balance for the site indicating the cut/fill requirements for development and estimates for all other material imports

All excavated spoil is to remain on site and stored in berms, which form part of the permanent works.

2.10 Asbestos-Containing material (ACM)

No ACM anticipated on this project. In the unlikely event of ACM being suspected on site, works will cease, the area in question cordoned off and a specialist contractor will be employed to complete testing of the material.

2.11 Details of any other hazardous materials known on site.

There are no known contaminants within the confines of the project.

2.12 Planning permission conditions

This Resource & Waste and Management Plan has been prepared in accordance with Planning Condition 11 of the grant of permission dated 23rd April 2014 for the Laois - Kilkenny Reinforcement Project (Reference 11.VA0015).

Planning Condition 11 includes the following requirements for waste management:

(a) location of any site and materials compound(s) including area(s) identified for the storage of construction refuse

- All materials delivered to site will, on the most part, be on an as required basis and will be stored adjacent to the 100kV or 400kV footprints. As part of the permanent scope of works, all excavated material is to be kept on site in 2no. berms – these berms will be shaped and seeded as part of the permanent works.
- There will be a designated waste holding area where any waste arising from site works will be segregated and put into designated skips.
- The waste holding area will be positioned on a hardstanding well away from any watercourse. (Refer to Site Logistics Plan for current proposed location).
- All waste skips will be monitored daily and once full will be removed from site by a licenced waste contractor. Daily site inspection records will be maintained, kept on site and made available for inspection as required.
- All foul waste from the welfare facilities will drain to a proprietary holding tank. The waste from the tank will be emptied and disposed of by a licensed waste contractor, as required. The tank will be checked daily as part of the daily site inspections.
- Records of inspections will be kept on site and made available for inspection as required. A copy of all Waste Collection Permits and Waste Facilities Licences will also be kept on site.

(g) measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network

The following points will apply when negating the risk of clay/debris/rubble/ etc. on the public road network:

- Kilwex have a cleaning policy in relation to equipment. Prior to entry to site and prior to leaving site, cleaning for all vehicles leaving site. All site haul roads will be constructed and maintained such that vehicles will not collect any excess debris or spoil on the wheels, axles and chassis of the vehicles.
- A wheel wash facility will be provided on site for use as required.
- All excavated spoil is to remain on site, therefore the risk of debris spilling onto the road network from vehicles leaving site is vastly reduced.
- Waste removal contractor will be required to cover any skips prior to leaving site.
- All vehicles leaving site will be inspected by Kilwex gateman for cleanliness and to ensure they are suitably and safely loaded. Any vehicles deemed non-compliant will not be allowed to leave site.
- When issuing orders and purchase orders to contractors/suppliers/hauliers/couriers and the like, Kilwex will include memos outlining the requirement that all vehicles are to be safely loaded and suitably cleaned prior to commencing their journey to the Coolnabacky site.
- When deemed necessary Kilwex will have a road sweeper on site.

- All nearby by roads shall be inspected by Kilwex daily or more frequently if deemed necessary due to construction works, weather and the like. Records of inspections shall be kept on site and made available for inspection as required.

(k) containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater.

Below are some measures which will be implemented onsite regarding fuel storage and management:

- All plant will be refuelled on site e.g., excavators, dumpers etc., Refuelling will take place at a designated distance away from watercourses (>25m) in accordance with the buffer zone guidelines highlighted in Section 10 of the EIS (Environmental Impact Assessment)
- Fuel will be transported to the site vehicles using a bunded fuel bowser. This bowser will be filled weekly by a fuelling lorry.
- Drip trays will be used while refuelling, and spill kits will be located onsite to be deployed if required.
- Rigid and articulated vehicles will be fuelled off site as would all site vehicles (jeeps, cars and vans).
- Only designated trained operators will be authorized to refuel plant on site.
- Mobile bowsers, tanks and drums will be stored in a secure, impermeable storage area, away from drains and open water.
- Fuel containers will be stored within a secondary containment system e.g., bund for static tanks or a drip tray for mobile stores.
- Ancillary equipment such as hoses, pipes will be contained within the bund.
- Taps, nozzles or valves will be fitted with a lock system.
- Fuel and oil stores, including tanks and drums, will be regularly inspected for leaks and signs of damage.
- Procedures and contingency plans will be set up to deal with an emergency accidents or spills; including availability of specialist 24/7 spill contractor in case of major incident.

(l) off-site disposal of construction/demolition waste and details of how it is proposed to manage excavated soil.

- There are no demolitions works in this Project. All excavated spoil is to remain on site and stored in berms, which form part of the permanent works.
- Any other wastes will be segregated, stored accordingly and collected by a licenced waste contractor. The waste area will be checked as part of Kilwex's daily site inspections and records of same will be kept on site and made available for inspection as required. Waste transfer licences will be available for inspection.

2.13 Ground contamination

During geotechnical site investigation, no contamination was found and so no material is to be removed from site.

2.14 Design Changes

This section shall be updated during the construction phase to reflect changes in design that may have an impact on resource and waste management.

3.0 Roles & Responsibilities

This section outlines the responsibilities for the key project stakeholders to ensure the development of an effective RWMP through the lifecycle of the project. Typical responsibilities are detailed in the EPA Best Practice Guidelines for R&WMP:

3.1 Contractor (Kilwex)

The Main Contractor procured by the Client to undertake the construction operations is responsible for the following:

- Preparing, implementing and reviewing the RWMP through construction (including the management of all suppliers and sub-contractors) as per the requirements of these guidelines.
- Identifying a designated and suitably qualified Resource & Waste Manager (RWM) who will be responsible for implementing the RWMP.
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site. Note that any resource that is legally a 'waste' must only be transported by a haulier with a valid Waste Collection Permit.
- Identifying all destinations for resources taken off-site. As above, any resource that is legally a 'waste' must only be transported to an authorised waste facility.
- End-of-waste and by-product notifications addressed with EPA where required.
- Clarification of any other statutory waste management obligations, which could include on-site processing.
- Full records of all resources (both wastes and other resources) should be maintained for the duration of the project.
- Preparing a RWMP Implementation Review Report at project handover.

4.0 Design approach

4.1 Design initiatives adopted for Reuse and Recycling

The Circular Economy

Ireland’s national waste policy is ‘A Waste Action Plan for A Circular Economy – Ireland’s National Waste Policy 2020 – 2025’. The policy is intended to move Ireland toward a circular economy in which focus is shifted away from waste disposal, favouring circularity and sustainability by identifying and maximising the value of material through improved design, durability, repair and recycling. By extending the time resources are kept within the local economy, both environmental and economic benefits are foreseen.

This project will implement the above policy as follows:

- Reuse on-site of all excavated soils and stones on site as part of the permanent works.
- The purchase of construction materials as needed to prevent over-supply and potential for damage whilst in storage.
- The segregation of construction waste streams into separate storage containers to maximise the potential for the re-use of the materials.
- Minimising the volume of waste through design.
- Take back schemes adopted where possible, e.g., pallets, packaging.
- Insisting on reusable formwork shuttering systems.

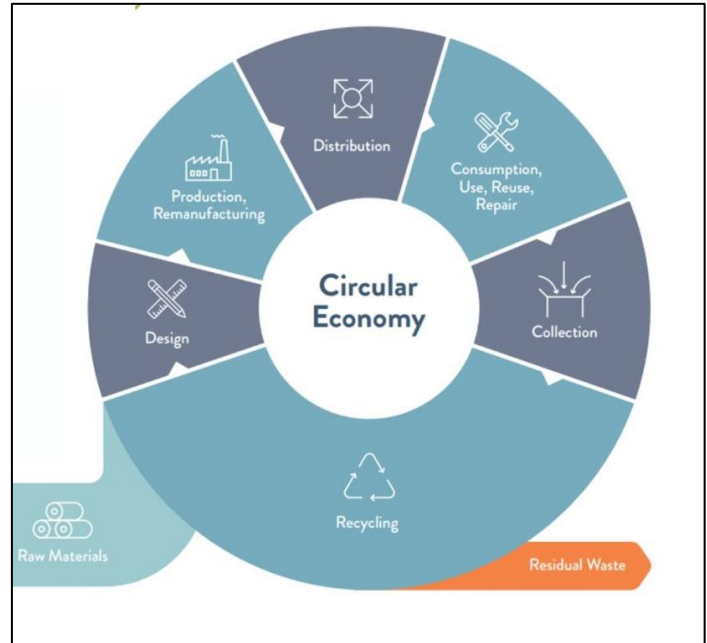


Figure 2 Waste Action Plan for a Circular Economy

4.2 Document design initiatives adopted for Green Procurement

- Supply chain competency shall be assessed prior to appointment via a pre-qualification questionnaire which cover key environmental matters.
- Procurement selection will minimise unnecessary packaging. Options for packaging reduction discussed with subcontractors and suppliers using measures such as ‘delivery when required’ delivery.
- A specialist environmental consultant with expert knowledge in waste prevention and minimisation has been employed to support Kilwex during this project.
- Methods of waste prevention and minimisation shall be discussed with potential subcontractors and suppliers at an early stage (pre-procurement). Proposed design solutions to be agreed, with innovation encouraged to recognise sustainable approaches.
- Material specifications for the project shall be flexible enough to allow for the variations in reclaimed materials. Specifications shall outline the essential performance properties required of a material but not over define the details.
- Use ordering procedures that avoid waste, i.e., no over-ordering, take-back schemes for both material surplus and offcuts.

- Contractual agreements secured to implement the initiatives outlined in our policies and the RWMP as part of the contract.

4.3 Document design initiatives adopted for Off-Site Construction

Precast material in the forms of concrete stairs, walls and exterior sandwich panels are incorporated into this project. This increases performance of the project in the following ways:

- Precast construction is seen to be a quicker method. This is evident in the quick turnaround of precast panels and walls, whereby entire levels of buildings can be formed in relatively short period of time. Also, with regard to precast panels for façade, massive areas are closed in, in a short space of time, meaning internal works can commence much earlier.
- Accuracy of product is seen to be superior as it is fabricated in a factory environment, negating weather and general site conditions.
- Less waste is produced. On site construction is said to be waste laden contributing to the amount of materials to be disposed of after completion of the project.
- It eliminates over ordering of materials, as materials are produced in a factory environment.
- Unusable or odd sized off cuts of materials do not occur. This is due to again materials being measured and procured by the specialist fabricator.
- Precast materials are often seen as being better quality. Using precast concrete as an example, concrete used in a controlled environment, outside of delay or weather factors can be utilised within optimum parameters.
- Use of precast items results in the reduction of concrete materials being used and waste on site. Reasons for such a belief is that there are less spillages associated within factory setting.

4.4 Document design initiatives adopted for Materials Optimisation

- Composite flooring is utilised in the 110kV building. This reduces the depth of concrete required in the first floor to carry significant loadings. In turn, this reduces the sizes of steel required to carry the first floor, in the steel frame and as such requires less steel and concrete.
- The shell of both the 110kV and 400kV builds are steel frame with an associated amount of cast in situ whether it is the raft foundation or concrete walls. The frame of the build is of relatively simple design. All columns placed on concrete formation either wall or foundation raft with either a cladding panel or a precast sandwich panel fixed to it.
- 3D modelling is undertaken in this project in relation to the steel frame. This aids in understanding the building layout in designing several elements of the build such as the gantry crane, insulated panel install, precast sandwich panels and roof gutter design. It ensures the required fixings cleat, spacing for the precast panel install is available and also indicates a certain amount of tolerance available within the panel, all whilst ensuring, insulated panels have a drip at junction where panel and precast meet. In turn, it ensures gantry crane can freely move about length of build.
- Coordination of design is an integral part of the project to reduce rework and waste as much as possible, ensuring product installed on site meets client requirements.
- It is important to physically compare external levels of a build to landscape design. Careful comparison can indicate issues with levels such as external levels being higher than DPC in blockwork causing damp, or simply ground levels do not meet DAC requirements.

4.5 Document design initiatives adopted for Flexibility and Deconstruction

In regard to this project, the 110kV build has both a precast sandwich panel and insulated cladding panel. The cladding panels can be removed relatively easy and sent to specialist waste disposal for recycling purposes, as can the roof also. The precast panels can be broken down and disposed of and

reused for filling on another construction project as can the foundation.

The steel frame is made of 100% recyclable steel. Dismantling of frame and sending it to waste metal recycle centre only takes days. Indeed, in the event of structural engineering sign off, structural steel frame can be re-used again, once members are straight and free from metal fatigue. Steel in the composite flooring can be separated from the concrete, with both by-products to be reused, steel to go to specialist waste disposal for recycling purposes and the concrete also as fill.

In regard to the 400kV build, again cast in situ walls can be removed, broken for fill along with other concrete elements of the build such as the cast in situ walls and raft foundation. The steel frame again can be either scrapped and sent to a metal waste recycler or simple re-erection in another location once sign off from structural engineer is achieved subject to metal fatigue and rust.

5.0 Key Materials Quantities & Costs

5.1 Resource and waste inventory

Description	LoW Code	Volume Generated (tonnes)	Prevention (tonnes) (non-waste)	Reused (tonnes) (non-waste)	Recycled (tonnes) (non-waste)	Recovered (tonnes) (non-waste)	Disposed (tonnes) (non-waste)	Unit Cost (€/tonne)	Total Cost (€)
Concrete	17 01 01								
Bricks	17 01 02								
Tiles & Ceramics	17 01 03								
Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances.	17 01 06								
Wood / Timber	17 02 01								
Glass	17 02 02								
Plastic	17 02 03								
Glass, plastic and wood containing or contaminated with hazardous substances	17 02 04								
Bituminous mixtures containing coal tar	17 03 01								
Bituminous mixtures containing other than those mentioned in 17 03 01	17 03 02								
Copper, bronze, brass	17 04 01								
Aluminium	17 04 02								
Lead	17 04 03								
Zinc	17 04 04								
Iron and Steel	17 04 05								
Tin	17 04 06								

Mixed Metals	17 04 07								
Metal waste contaminated with hazardous substances	17 04 09								
Cables other than those in 17 04 10	17 04 11								
Soil and stones containing hazardous substances	17 05 03								
Soil and stones other than those in 17 05 03	17 05 04								
Insulation materials other than those mentioned in 17 06 01 and 17 06 03	17 06 04								
Construction materials containing asbestos	17 06 05								
Gypsum-based construction materials other than those mentioned in 17 08 01	17 08 02								
Mixed C&D waste other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	17 09 04								
Other resources (nonwasted materials) (specify as needed)									
Other wastes (specify as needed)									

Table 3 Waste Materials table

5.2 Contractors Removing Waste

Any resource that is legally a ‘waste’ shall only be transported by a haulier with a valid Waste Collection Permit to an authorised facility with a valid waste management licence. Kilwex will ensure that waste collectors/hauliers and waste facilities shall be assigned prior to works commencing. Waste facilities shall issue a letter of acceptance prior to works commencing to ensure that the facility is suitable and there is sufficient capacity.

Name and Address of company removing waste materials	Waste Collection Permit Number	Expiry Date:	Waste Management Licence Number (for facility receiving the waste)	Licence Expiry Date:	Copies held on site (Y/N)
Bord Na Mona Main Street, Newbridge, Co.Kildare W12 XR59 Ireland	NECPO-08-10601-07	14/12/2025	Various Facilities used. Please See Appendix Waste Facility Permit Numbers	See previous Statement	Yes
AQS Castletown Galmoy Co. Kilkenny E41 CH93 Ireland	NWCPO-12-02583-03	21/07/2027	Various Facilities used. Please See Appendix Waste Facility Permit Numbers	See previous Statement	Yes

Table 4 Waste Carriers List

6.0 Site Management

6.1 Resource and Waste Manager (RWM) of the RWMP

The Resource Manager for this project shall be the Kilwex Project Manager. The RM responsibilities shall include:

- Update the plan as required to reflect new resource streams, work practices, suppliers or resource management options as required.
- Delivery of training in relation to resource management, e.g. induction and toolbox talks.
- Ensuring site infrastructure is supplied and maintained as fit for purpose.
- Conducting internal site audits including audits of subcontractor operations. Participating as required for any Local Authority or other audits undertaken.

Kilwex Contacts

Position Title:	Name:	Phone:	Email:
PSCS / Main Contractor	Kilwex Civil	045 889 479	civileng@kilwex.ie
Managing Director	Darragh O'Connell	087 2542557	Darragh.oconnell@kilwex.ie
Contracts Manager	Fintan McKeon	086- 1081029	Fintan.mckeon@kilwex.ie
Project Manager / Resource Manager (RM)	Aaron McEvoy	086 103 4052	aaron.mcevoy@kilwex.ie
Site Manager	Philip Holmes	086 0842195	philip.holmes@kilwex.ie
Environmental Manager	Daniella O'Neill	086 8427748	daniella@coyleenv.ie
SHEQ Manager	Warren Donnelly	086 8587795	Warren.donnelly@kilwex.ie
EHS Advisor	Antonio Panadero	086 035 5194	antonio.panadero@kilwex.ie
Site Emergency Number	Aaron McEvoy	086 103 4052	aaron.mcevoy@kilwex.ie
Project Archaeologist	Martin Byrne	087 262 4954	martinbyrne1063@gmail.com
Overall Project PSDP	Patrick Graham	087 418 5317	patrick.graham@esb.ie

Table 5 Kilwex Contacts

Employer (ESB) Contacts

Position:	Name:	Phone:	Email:
ESB EMP Project Manager	Aoife Heneghan	0879822952	aoife.heneghan@esb.ie
ESB EMP Environmental Specialist	Lorna Conway	0879202428	lorna.conway@esb.ie

Table 6 ESB EMP Contacts

Third Party Contacts

Organisation:	Position:	Name:	Phone:	Email Address:
Inland Fisheries Ireland	Eastern River Basin District	Dublin Regional Office	(01) 2787022	blackrock@fisheriesireland.ie
National Parks and Wildlife Service	North - Eastern Region	District Conservation Officer	(076) 1002594	nature.conservation@chg.gov.ie
Environmental Protection Agency (EPA)	EPA	EPA Headquarters	(053) 9160600	info@epa.ie
Local Authority	Laois County Council	Laois County Council Headquarters	(057) 866 4000	corpaffairs@laoiscoco.ie
Department of Culture, Heritage and the Gaeltacht	National Monuments Service	Custom House, Dublin	(01) 8882000	nationalmonuments@chg.gov.ie
Health and Safety Authority	Health and Safety Authority	Head Office, Dublin	(01) 6147000	wcu@hsa.ie
Emergency Services	An Garda Síochána	Stradbally Garda	(057) 8625222	-
Emergency Services	Ambulance and Fire Service	Ambulance and Fire Service	999 or 112	-
Bord na Mona	Waste Disposal	Skips Off site	045 439 000	info@bnmrecycling.ie
AQS	Waste Disposal	Specialist Waste Removal	1800 500 020	info@aqssolutions.ie

Table 7 Third Party Contacts

6.2 Site induction and toolbox talk training

- The project induction shall include a briefing for all operatives on the site-specific environmental requirements of this project. This shall include key details from the R&WMP and environmental impacts and controls detailing in the project CEMP.
- Environmental/waste topics shall be included once a month into site toolbox talks. These weekly talks provided to all site operatives shall cover such matters as disposal of waste within correct waste bins and skips to avoid cross contamination and to ensure recycling is completed correctly.

6.3 Procedures for identifying suitably authorised waste collection operators and waste destination sites

- Waste collectors and waste facilities shall be assigned by Kilwex prior to works commencing. All licences and WCP will be stored on site by Kilwex at all times for reference.
- Waste facilities are required to issue a letter of acceptance to the contractor (Kilwex) prior to works commencing to ensure that the facility is suitable and there is sufficient capacity.
- Waste Collection: all waste moved off site.
- A list of currently authorised waste collectors can be accessed here: <https://www.nwcpo.ie/permitsearch.aspx>

- Waste Disposal / Recovery: all waste shall be sent to a suitably authorised waste facility. Waste Facility Permits or Certificate of Registrations can be accessed here:
<http://facilityregister.nwcpo.ie>
- A list of sites currently licensed by the EPA (Industrial Emissions or Waste Licence) is available on the following website:
<https://epawebapp.epa.ie/terminalfour/waste/index.jsp?disclaimer=yes&Submit=Continue>
<https://epawebapp.epa.ie/terminalfour/ippc/index.jsp?disclaimer=yes&Submit=Continue>

6.4 Requirements for resource-efficient supply chains

Kilwex will ensure that supply chain appointed for this project are adhering to best practices with regard to resources and waste management. This will require:

- Supply chain competence assessed via pre-qualification questionnaires to confirm that contractors have sufficient resources, e.g. access to competent advice, supervision, environmental policies and procedures.
- Early engagement and collaboration with the supply chain to implement ordering procedures that avoid waste, e.g. no over-ordering, use of take-back schemes for packaging, material surplus and offcuts. Formal prestart meetings to review and agree controls and best practice to be followed.
- On-going consultation with contractors during the project to adopt a 'continual improvement' policy of reviewing lessons learned.

6.5 Procedures for record keeping and reporting

- The RM shall ensure that all waste records shall be stored on the Kilwex project SharePoint and via the Project Management System (PMS) on site for hard copies of waste records.
- All records will be retrievable at site level upon request from interested parties. This includes documents such as haulier dockets, facility dockets and final waste transfer forms.
- In advance of proposed soil and waste transfer, Kilwex will request letters of acceptance from the proposed waste facility/landfill/transfer station that will accept the waste.

A Waste Register (also may be known as a waste despatch log) will be held on site where a record will be kept of each waste consignment taken from the site. The details recorded for each consignment will, at a minimum, include:

- Date of removal of waste
- Waste stream description
- Waste LoW (EWC) code.
- Quantity of waste (in tonnes or litres as appropriate)
- Waste haulage contractor name and address.
- Waste haulage collection permit no.
- Waste haulage vehicle registration.
- Waste disposal contractor name and address.
- Waste treatment (Reuse/Recycling/Disposal) contractor certificate of registration, permit no. or waste licence no. including appropriate disposal/recovery code.
- Confirmation that waste was received/accepted by designated facility.

- Final destination of the waste (including waste licence number)

See Section 5.1 for sample Waste Register.

- Following the transfer of the waste, Site management shall obtain confirmation of the tonnage of waste transferred to the facility. This tonnage must be noted on all waste records.
- A monthly waste report summarising all waste types leaving site shall be prepared by Kilwex.

6.6 Requirements for communications with the local authority and other stakeholders

The Kilwex RM shall communicate through the construction phase with all stakeholders as required. This may include:

- Internal reporting of resource statistics to the Client and the wider Kilwex management team. This may include performance relative to agreed targets and objectives.
- Engaging with relevant local authority on any site inspection or enforcement audits undertaken at the site. All follow-up actions and corrective actions should be logged and reported to the local authority.
- Engaging with other stakeholders (EPA, public, etc.) as appropriate in relation to the resource management on site.
- Upon completion of construction, the RM will prepare a final report (post-project RWMP) summarising the outcomes of resource management processes adopted, the total reuse and recovery figures and the final destinations of all resources taken off-site.

6.7 Procedures for audits and inspections of resource management practices

Kilwex Civil has an integrated environmental, quality and health and safety management system in place. This system is certified to ISO 9001, ISO 14001 and Safe-T-Cert and is designed to maintain and continually improve the effectiveness and efficiency of the organisation's performance.

To monitor the company's resource management practices the following inspections and audits shall take place:

- Daily checks shall be carried out daily by Kilwex Site Management team, which will include checks that all works are in compliance with this RWMP. This will include monitoring of the Waste Storage Area (WSA), ensuring correct waste segregation, storage of waste, signage, subcontractor compliance, reviewing waste documentation, etc.
- No vehicle shall be permitted to leave site until the Site Management have countersigned the waste transfer note. The Site Management shall ensure that the waste carrier is authorised by Kilwex and that the transfer note is completed correctly.
- Regular checks shall be carried out with a documented call to the waste license facility to check corresponding delivery to transfer note at hand.
- Periodically site team members shall follow vehicles removing waste from site to ensure that the waste is being disposed of at the agreed waste facility. Records of same shall be recorded.
- Formal EHS audits shall be carried out on site by Kilwex H&S Department. These inspections shall be completed on a weekly basis.
- The site management team shall also complete a formal weekly SHEQ checklist.
- Kilwex will participate in any additional audits shall be carried out by ESB or other parties during the project.
- Findings from audits and inspections to be summarised on a monthly environmental report.

6.8 Requirements for a final report

Upon completion of the project a RWMP Implementation Review Report shall be produced.

7.0 Site Infrastructure

7.1 Minimum requirements for site signage on resource management

In order to ensure that waste materials are correctly segregated, it is the responsibility of the project RM to ensure all staff are informed by means of clear signage and verbal instruction and made responsible for ensuring site housekeeping and the proper segregation of construction waste materials.

7.2 Minimum requirements for resource storage (dedicated skips, hazardous materials storage, stockpile management, etc.)



Figure 3 Segregation of Waste

The Waste Storage Area (WSA) shall be established in the designated Kilwex site compound on a hard standing. The WSA will have adequate space for storage and handling, suitable signage posted, Where required, skips will be covered.

Non-hazardous waste

The designated WSA will have dedicated waste containers for segregation of wastes including but not limited to:

- Mixed / General waste
- Bulky waste

- Metal
- Mixed dry waste

All excavated material is to be kept on site for reuse or to form part of site berms. In the event of waste soils being exported off-site, the soil shall be classified as inert, non-hazardous or hazardous in accordance with the EPA's Waste Classification Guidance – List of Waste & Determining if Waste is Hazardous or Non-Hazardous document to ensure that the waste material is transferred by an appropriately permitted waste collection permit holder and brought to an appropriately permitted or licensed waste facility. Burning or burial of waste shall not be allowed at any time.

Hazardous waste

There is a low-risk of contaminated soil on this project. During the project there will be relatively minor amount of hazardous substances in use on the project. These may include:

- Fuel
- Oil
- WEEE
- Construction chemicals, e.g. additives, cement, sealants, paints.
- Sewage (use of chemical toilets at mobilisation).
- Contaminated soil. Any fuel or oil spills shall be managed as per the project Emergency Response Plan.

A bunded chemical stores shall be in place for safe storage of chemicals on site (expected to be very low quantities). Any hazardous waste shall be responsibly disposed of by a licensed contractor with the site team monitoring compliance with legal requirements under the Waste Management Act as outlined in Sections 6.3 and 6.5.

All foul water from offices/welfare will be stored in a holding tank for removal from site by a specialist contractor. Foul tank will be inspected daily. Foul tank will be emptied when full, most likely several times a week subject to the number of personnel on site.

Appendix A - Definitions

Term	Definition
Backfilling	Means any recovery operation where suitable non-hazardous waste is used for purposes of reclamation in excavated areas or for engineering purposes in landscaping. Waste used for backfilling must substitute non-waste materials, be suitable for the aforementioned purposes, and be limited to the amount strictly necessary to achieve those purposes.
By-product	A substance or object resulting from a production process the primary aim of which is not the production of that substance or object is considered not to be waste, but to be a by-product if the following conditions are met: <ul style="list-style-type: none"> • further use of the substance or object is certain. • the substance or object can be used directly without any further processing other than normal industrial practice. • the substance or object is produced as an integral part of a production process; and • further use is lawful in that the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.
Brownfield Land	Land previously developed e.g. used for industrial, commercial or residential uses, where such land may be contaminated with hazardous substances or anthropogenic or man-made substances that are not natural to the environment
C & D	Construction & Demolition
C&D waste	Waste generated by construction and demolition activities.
Disposal	Means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations.
End of Waste	Waste which has undergone a recycling or other recovery operation is considered to have ceased to be waste if it complies with the following conditions: <ul style="list-style-type: none"> • the substance or object is to be used for specific purposes; • a market or demand exists for such a substance or object; • the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products • the use of the substance or object will not lead to overall adverse environmental or human health impacts.
Hazardous Waste	Waste which displays one or more of the hazardous properties listed in Annex III of Directive 2008/98/EC.
Inert Waste	Waste that does not undergo any significant physical, chemical or biological transformations (e.g. concrete, bricks, masonry, tiles). Inert waste will not dissolve, burn or otherwise react physically or chemically, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health.
LoW	List of waste

Term	Definition
Non-hazardous waste	Waste which is not covered by the definition of hazardous waste.
Pre-demolition Audit	A preparatory activity with the purpose of: <ul style="list-style-type: none"> collecting information about the qualities and quantities of the C&D waste materials that will be released during the demolition or renovation works; and giving general and site-specific recommendations regarding the demolition process.
Prevention	Means measures taken before a substance, material or product has become waste, that reduce: <ul style="list-style-type: none"> the quantity of waste, including through the re-use of products or the extension of the life span of products. the adverse impacts of the generated waste on the environment and human health; or the content of hazardous substances in materials and products.
Product	All material that is deliberately created in a production process. In many cases it is possible to identify one (or more) 'primary' products, this or these being the principal material(s) produced.
Production Residue	A material that is not deliberately produced in a production process but may or may not be waste.
Re-use	Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.
Recycling	Any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.
Recovery	Any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
TFS Regulation	Regulation (EC) No. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste.
Treatment	Means recovery or disposal operations, including preparation prior to recovery or disposal.
Uncontaminated soil	Essentially relates to virgin soil or soil that is equivalent to virgin soil.
Waste	Any substance or object which the holder discards or intends or is required to discard.
Waste Holder	Waste producer or the natural or legal person who is in possession of the waste.
Waste Treatment	Recovery or disposal operations, including preparation prior to recovery or disposal.
WCP	Waste Collection Permit
WSA	Waste Storage Area