codling wind park

# Environmental Impact Assessment Report

## Volume 3

## Chapter 31 Waste & Resource Management


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## Abbreviations

| Abbreviation | Term in Full |
|---|---|
| ABP | An Bord Pleanála |
| CDP | City/county development plan |
| C&D | Construction and Demolition |
| CDW | Construction and Demolition Waste |
| CDWMP | Construction and Demolition Waste Management Plan |
| CE | Circular Economy |
| CEMP | Construction Environmental Management Plan |
| CoR | Certificate of Registration |
| CSO | Central Statistics Office |
| CUR | Connacht–Ulster Region |
| CWP | Codling Wind Park |
| CWPL | Codling Wind Park Limited |
| DCC | Dublin City Council |
| DECC | Department of the Environment, Climate and Communications |
| DHLGH | Department of Housing, Local Government and Heritage |
| DLRCC | Dún Laoghaire–Rathdown County Council |
| EC | European Commission |
| ECC | Export Cable Corridor |
| EIA | Environmental Impact Assessment |
| EIAR | Environmental Impact Assessment Report |
| EMR | Eastern–Midlands Region |
| EPA | Environmental Protection Agency |
| EU | European Union |
| GSI | Geological Survey Ireland |
| GW | Gigawatt |
| HDD | Horizontal directional drilling |
| IE | Industrial Emissions |
| IEMA | Institute of Environmental Management and Assessment |
| IPC | Integrated pollution control |
| LoD | Limit of Deviation |

| | |
|---|---|
| Mbgl | Meters below ground level |
| NMPF | National Marine Planning Framework |
| NWCPO | National Waste Collection Permit Office |
| NWMP | National Waste Management Plan |
| O&M | Operations and maintenance |
| RWMPO | Regional Waste Management Planning Office |
| RWMP | Regional Waste Management Plan |
| SR | Southern Region |
| SWR | Southern Waste Region |
| TJB | Transition joint bay |
| WAPCE | Waste Action Plan for a Circular Economy |
| WEEE | Waste electrical and electronic equipment |
| WFP | Waste Facility Permit |
| WMA | Waste Management Act |
| WWTP | Waste Water Treatment Plant |

## Definitions

| Glossary | Meaning |
|---|---|
| aggregates | Broad category for coarse particulate material used in construction, including sand, gravel, crushed stone, slag, recycled concrete and geosynthetic aggregates (EC, 2015). |
| the applicant | The developer, Codling Wind Park Limited (CWPL). |
| biodegradable waste | Means any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard (EEA, 2023). |
| bulky waste | Large items of waste material such as electric appliances, furniture, large car parts, trees, etc. (EEA, 2023). |
| circular economy | A circular economy aims to maintain the value of products, materials and resources for as long as possible by returning them into the product cycle at the end of their use, while minimising the generation of waste. The fewer products we discard, the fewer materials we extract, the better for our environment This process starts at the very beginning of a product's lifecycle: smart product design and production processes can help save resources, avoid inefficient waste management and create new business opportunities (Eurostat, 2023). |
| Codling Wind Park (CWP) Project | The proposed development as a whole is referred to as the Codling Wind Park (CWP) Project, comprising the offshore infrastructure, the onshore infrastructure and any associated temporary works. |
| Codling Wind Park Limited (CWPL) | A joint venture between Fred. Olsen Seawind (FOS) and Électricité de France (EDF) Renewables, established to develop the CWP Project. |
| Construction and Demolition Waste | Rubble and other waste material arising from the construction, demolition, renovation or reconstruction of buildings or parts thereof, whether on the surface or underground. Consists mainly of building material and soil, including excavated soil. Includes waste from all origins and from all economic activity sectors (EEA, 2023).<br>It contains a wide variety of materials, such as concrete, bricks, wood, glass, metals and plastic. It includes all the waste produced by the construction and demolition of buildings and infrastructure, as well as road planning and maintenance (EC, 2022). |
| Compound A | A temporary construction compound, support area and storage facility for the landfall works, and to support the installation of the onshore export cables. It will operate as a hub for the onshore construction works as well as acting as a staging post and secure storage for equipment and component deliveries. |
| Compound B | A temporary construction compound/laydown area for general cable route and onshore substation construction activities. |
| Compound C | A temporary construction compound for the onshore substation site. Contractor welfare facilities will be located in this compound as well as some material storage space. |

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| Compound D | A temporary construction compound and laydown area to facilitate the construction of the bridge over the cooling water channel. |
| cumulative impacts | The impacts (positive or negative, direct and indirect, long-term and short-term impacts) arising from a range of activities throughout an area or region, where each individual effect may not be significant if taken in isolation. Such impacts can arise from the growing volume of traffic, the combined effect of a number of agriculture measures leading to more intensive production and use of chemicals, etc. Cumulative impacts include a time dimension, since they should calculate the impact on environmental resources resulting from changes brought about by past, present and reasonably foreseeable future actions (EEA, 2023). |
| disposal | Disposal of waste means: the collection, sorting, transport and treatment of waste as well as its storage and tipping above or underground; the transformation operations necessary for its reuse, recovery or recycling (Eurostat, 2023). |
| energy recovery | A form of resource recovery in which the organic fraction of waste is converted to some form of usable energy. Recovery may be achieved through the combustion of processed or raw refuse to produce steam through the pyrolysis of refuse to produce oil or gas; and through the anaerobic digestion of organic wastes to produce methane gas (EEA, 2023). |
| Environmental Impact Assessment (EIA) | A systematic means of assessing the likely significant effects of a proposed project, undertaken in accordance with the EIA Directive and the relevant Irish legislation. |
| Environmental Impact Assessment Report (EIAR) | The report prepared by the Applicant to describe the findings of the EIA for the CWP Project. |
| ESBN network cables | Three onshore export cable circuits connecting the onshore substation to the proposed ESBN Poolbeg substation, which will then transfer the electricity onwards to the national grid. |
| export cables | The cables, both onshore and offshore, that connect the offshore substations with the onshore substation. |
| hazardous waste | A term applied to those wastes that because of their chemical reactivity, toxic, explosive, corrosive, radioactive or other characteristics, cause danger, or are likely to cause danger, to health or the environment (EEA, 2023). |
| horizontal directional drilling (HDD) | HDD is a trenchless drilling method used to install cable ducts beneath the ground through which onshore export cables from can be pulled. HDD enables the installation of cables beneath obstacles such as roads, waterways and existing utilities. |
| household waste | Solid waste composed of garbage and rubbish, which normally originates from houses (EEA, 2023). |
| incineration | Incineration is a method of waste disposal that involves the combustion of waste. It may refer to incineration on land or at sea. Incineration with energy recovery refers to incineration processes where the energy created in the combustion process is harnessed for reuse, for example for power generation. Incineration without energy recovery means the |

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| | heat generated by combustion is dissipated in the environment (Eurostat, 2023). |
| preparing for reuse | 'Preparing for reuse' means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be reused without any other pre-processing. (Eurostat, 2023). |
| recycling | Recycling of waste is defined in the Waste Framework Directive as any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. Recycling can be split into the subcategories 'Material recycling' and the organic recycling 'Recycling - composting and digestion'. The latter is only possible for separately collected organic waste. (Eurostat, 2022). |
| reuse | Reuse of material without any structural changes to the material (EEA, 2023). |
| landfall | The point at which the offshore export cables are brought onshore and connected to the onshore export cables via the transition joint bays (TJB). For the CWP Project The landfall works include the installation of the offshore export cables within Dublin Bay out to approximately 4 km offshore, where water depths that are too shallow for conventional cable lay vessels to operate. |
| landfill | Landfill is the deposit of waste into or onto land (i.e. underground) (EEA, 2023). It includes specially engineered landfill sites and temporary storage of over one year on permanent sites. The definition covers both landfill in internal sites, i.e. where a generator of waste is carrying out its own waste disposal at the place of generation, and in external sites. Landfill is often simply referred to as deposit (Eurostat, 2023). |
| limit of deviation (LoD) | Locational flexibility of permanent and temporary infrastructure is described as a LoD from a specific point or alignment. |
| material recovery | Restoration of materials found in the waste stream to a beneficial use which may be for purposes other than the original use (EEA, 2023). |
| municipal waste | Waste from households, as well as other waste which, because of its nature or composition, is similar to waste from household (EEA, 2023). |
| non-hazardous waste | Non-hazardous waste means waste which is not classified as hazardous waste (EEA, 2023). |
| onshore export cables | The cables which transport electricity generated by the WTGs from the TJBs at the landfall to the onshore substation. |
| onshore development area | The entire footprint of the OTI and associated temporary works that will form the onshore boundary for the planning application. |
| onshore transmission infrastructure (OTI) | The onshore transmission assets comprising the TJBs, onshore export cables and the onshore substation. The EIAR considers both permanent and temporary works associated with the OTI. |
| onshore substation | Site containing electrical equipment to enable connection to the national grid. |
| onshore substation site | The area within which permanent and temporary works will be undertaken to construction the onshore substation. |

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| operations and maintenance (O&M) activities | Activities (e.g., monitoring, inspections, reactive repairs, planned maintenance) undertaken during the O&M phase of the CWP Project. |
| O&M phase | This is the period of time during which the CWP project will be operated and maintained. |
| Organic waste | Waste containing carbon compounds. |
| Packaging (waste) | Packaging waste is waste comprising materials, or items, used to protect, contain or transport a commodity or product and usually considered a type of consumer waste. Packaging waste management shall mean the management of waste as defined in Directive 2008/98/EC (waste means any substance or object which the holder disposes of or is required to dispose of pursuant to the provisions of national law in force). (EEA, 2023) |
| Poolbeg 220kV substation | This is the ESBN substation that the ESBN network cables connect into, from the onshore substation. This substation will then transfer the electricity onwards to the national grid |
| prevention (waste / pollution) | The use of materials, processes, or practices to reduce, minimise, or eliminate the creation of pollutants or wastes. It includes practices that reduce the use of toxic or hazardous materials, energy, water, and/or other resources (EEA, 2023). |
| solid waste | Discarded solid materials. Includes agricultural waste, mining waste, industrial waste and municipal waste (EEA, 2023). |
| temporary hdd compound 1 | The area within Compound C that will house the ESBN network cable HDD entry or exit pits as well as associated plant, equipment and facilities. |
| temporary hdd compound 2 | The area adjacent to the Poolbeg 200kV substation that will house the ESBN network cable HDD entry or exit pits as well as associated plant, equipment and facilities. |
| temporary tunnel compound 1 | The area within Compound A, near the landfall, within which the Compound A tunnel launch shaft will be located. |
| temporary tunnel compound 2 | The area within which the Shellybanks Road tunnel reception shaft will be located. |
| temporary tunnel compound 3 | The area within the onshore substation site, within which the onshore substation tunnel launch shaft will be located. |
| transition joint bay (TJB) | This is required as part of the OTI and is located at the landfall. It is an underground bay housing a joint which connects the offshore and onshore export cables. |
| tunnel | The onshore export cables will be installed within a tunnel that extends from within Compound A, near the landfall, to the onshore substation site. |
| tunnel shaft | Located within the temporary tunnel compounds, the tunnel shafts will facilitate the two tunnel drives required to complete the construction of the tunnel. |
| waste | Waste means materials that are not prime products (that is, products produced for the market) for which the generator has no further use in terms of his/her own purposes of production, transformation or |

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|---|---|
| | consumption, and of which he/she wants to dispose. Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Residuals recycled or reused at the place of generation are excluded (EEA, 2023). |
| waste generation | The weight or volume of materials and products that enter the waste stream before recycling, composting, landfilling or combustion takes place. Also can represent the amount of waste generated by a given source or category of sources (EEA, 2023). |
| waste management | The collection, transport, treatment and disposal of waste (including after-care of disposal sites) (EEA, 2023). |
| waste minimisation | Measures and/or techniques that reduce the amount of wastes generated during any domestic, commercial and industrial process (EEA, 2023). |
| waste recovery | The process of obtaining materials or energy resources from waste (EEA, 2023). |
| waste stream | The total flow of solid waste from homes, businesses, institutions and manufacturing plants that is recycled, burned, or disposed of in landfills, or segments thereof such as the 'residential waste stream' or the 'recyclable waste stream.' (EEA, 2023). |
| waste-to-energy | Waste-to-energy scheme means incineration of waste with recovery of generated energy. Waste-to-energy schemes turn waste into steam or electricity to heat, cool, light and/or otherwise power homes and industry through the process of combustion. Just as coal, oil or natural gas is burned in boilers to generate electricity, waste is used as a fuel to generate power (EEA, 2023). |
| waste treatment | The physical, thermal, chemical or biological processes, that change the characteristics of the waste in order to reduce its volume or hazardous nature, to facilitate its handling or to enhance recovery (EEA, 2023). |

# 31 WASTE AND RESOURCE MANAGEMENT

## 31.1 Introduction

1. Codling Wind Park Limited (hereafter 'the Applicant') is proposing to develop the Codling Wind Park (CWP) Project, a proposed offshore wind farm (OWF) located in the Irish Sea approximately 13–22 km off the east coast of Ireland, at County Wicklow.

2. This chapter forms part of the Environmental Impact Assessment Report (EIAR) for the CWP Project. The purpose of the EIAR is to provide the decision-maker, stakeholders and all interested parties with the environmental information required to develop an informed view of any likely significant effects resulting from the CWP Project, as required by the European Union (EU) Directive 2011/92/EU (as amended by Directive 2014/52/EU) (the EIA Directive).

3. This EIAR chapter describes the potential impacts of the onshore transmission infrastructure (OTI) on waste and resource management during the construction, operation and maintenance (O&M) and decommissioning phases.

4. The OTI is situated on the Poolbeg Peninsula and includes the transition joint bays (TJBs), onshore export cables, the onshore substation and the Electricity Supply Board Networks (ESBN) network cables to connect the onshore substation to the Poolbeg 220kV substation. This chapter will also describe the potential impacts of the works at the landfall (landward of the high water mark (HWM)), where the offshore export cables are brought onshore and connected to the onshore export cables at the TJBs (hereafter all these works are referred to as the 'OTI').

5. In summary, this EIAR chapter:

   - Details the EIA scoping and consultation process undertaken and sets out the scope of the impact assessment for waste and resource management;
   - Identifies the key legislation and guidance relevant to waste and resource management, with reference to the latest updates in guidance and approaches;
   - Confirms the study area for the assessment and presents the impact assessment methodology for waste and resource management;
   - Describes and characterises the baseline environment for waste and resource management, established from desk studies, project data, and consultation;
   - Defines the project design parameters for the impact assessment and describes any embedded mitigation measures relevant to the waste and resource management assessment;
   - Presents the assessment of potential impacts on waste and resource management and identifies any assumptions and limitations encountered in compiling the impact assessment; and
   - Details any additional mitigation and/or monitoring necessary to prevent, minimise, reduce or offset potentially significant effects identified in the impact assessment.

6. With regard to the offshore infrastructure, waste generated during the construction, O&M and decommissioning phases will be managed on board the vessels and transported back to a base port (or ports). From there, all waste will be managed in line with applicable licenses and waste management legislation. The location of these ports is not known and is not expected to be known until post consent. On this basis, the consideration of waste management from the offshore infrastructure has been scoped out from this assessment.

7. The agreed approach for the Dumping at Sea (DAS) permit is to submit the DAS permit application for the CWP Project once planning permission for the CWP Project is granted or, at the earliest point, following submission of the planning application. Further details on this future consent process are

provided in **Chapter 4 Project Description.** The DAS permit is not considered further in this assessment

8. The assessment should be read in conjunction with **Appendix 31.1 Cumulative Effects Assessment**, which considers other plans, projects, and activities that may act cumulatively with the CWP Project and provides an assessment of the potential cumulative impacts on waste and resource management.

9. A summary of the CEA for waste and resource management is presented in **Section 31.11**.

10. Additional information to support the assessment includes the **Construction and Demolition Waste Management Plan (CDWMP)** submitted as part of the planning application.

## 31.2 Consultation

11. Consultation with statutory and non-statutory organisations is a key part of the EIA process. Consultation with regard to waste and resource management has been undertaken to inform the approach to and scope of the assessment.

12. The key elements to date have included EIA scoping, consultation events, and meetings with key stakeholders. The feedback received throughout this process has been considered in preparing the EIAR. EIA consultation is described further in **Chapter 5 Environmental Impact Assessment Methodology**, the **Planning Documents** and in the **Public and Stakeholder Consultation Report** which has been submitted as part of the planning application.

13. **Table 31-1** provides a summary of the key issues raised during the consultation process relevant to waste and resource management and details how these issues have been considered in the production of this EIAR chapter.

Table 31-1 Consultation responses relevant to waste and resource management

| Consultee | Comment | How issues have been addressed |
|---|---|---|
| Scoping responses | | |
| Dublin City Council (DCC)<br>5 May 2021 | No comments were received with regard to waste and resource management, as part of this response. | N/A |
| Topic specific meetings | | |
| Dublin City Council (DCC)<br>Meeting Dates: various through 2022–2023 | Consideration of lead in time for licences for disposal of waste and onshore invasive species from the CWP Project. | Noted regarding lead in times for waste licences. This will be managed by the principal contractor.<br><br>Invasive species disposal managed in line with the **Onshore Invasive Species Management Plan** provided with the Planning Application. |
| Dublin City Council (DCC)<br>20 February 2024 | Reference was made by DCC Representatives to the Poolbeg Planning Scheme 2019 & policies | Contaminated land is addressed in **Chapter 19 Soils & Geology** and **Appendix 19.5** |

| Consultee | Comment | How issues have been addressed |
|---|---|---|
| | in this document relating to the management of contaminated land | **Contamination Risk Assessment (CRA)**. |
| Other | | |
| Eastern–Midland Regional Waste Office<br><br>Email correspondence: 19 June 2023 | No response received at this stage. | N/A |
| Public Consultation | No specific comments were raised with regard to waste management. | N/A |

## 31.3 Legislation and guidance

### 31.3.1 Overview

14. The current government policy document on waste, which covers the period 2020–2025, is entitled *A Waste Action Plan for a Circular Economy*: *Ireland's National Waste Policy 2020-2025* (WAPCE) and was published in June 2020.

15. A key objective of the WAPCE is to shift focus away from waste disposal and treatment to ensure that materials and products remain in productive use for longer, thereby preventing waste and supporting reuse. The following is noted in the Plan:

> '*In a circular economy the value of products and materials is maintained for as long as possible; waste and resource use are minimised, and resources are kept within the economy when a product has reached the end of its life, to be used again and again to create further value*.'

16. The Circular Economy and Miscellaneous Provisions Act 2022 was signed into law in July 2022 and the Government has published a *Whole of Government Circular Economy Strategy 2022–2023*, which is Ireland's first national circular economy strategy. **Plate 31-1** shows a graphic of the circular economy model.


Plate 31-1 The Circular Economy model (Source: European Commission)

17. However, where waste generation is unavoidable, waste management in Ireland is subject to EU, national and regional waste legislation, which defines how waste materials must be managed, transported and treated. This legislation implements a waste hierarchy and establishes a priority order for waste handling and treatment, as set out in **Plate 31-2**.

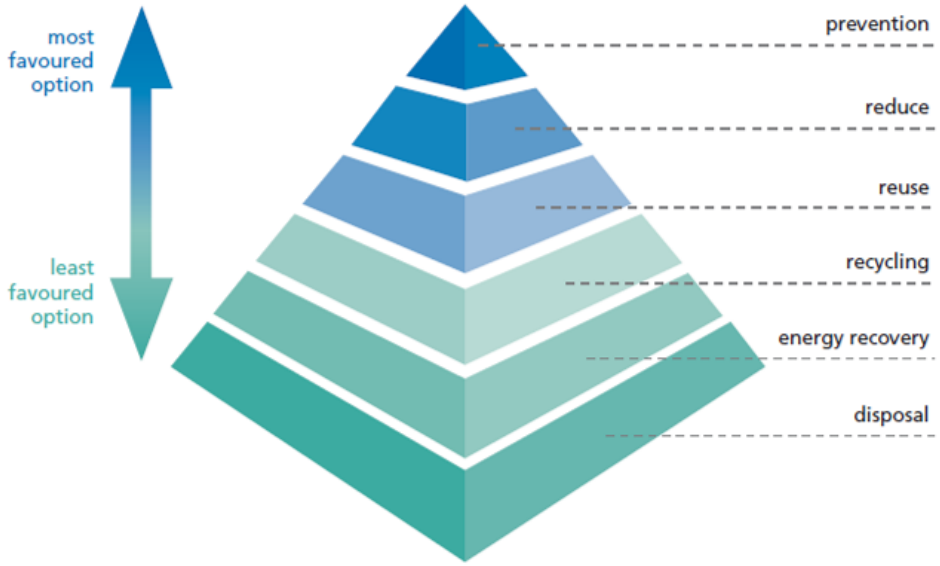



Plate 31-2 Waste management hierarchy (Source: EPA)

### 31.3.2 Legislation

18. The main legislation that is applicable to the assessment of waste and resource management is summarised below. Further detail is provided in **Chapter 2 Policy and Legislative Context**.

19. The overarching EU legislation on waste management is Directive (EU) 2018/851 of the European Parliament and of the Council amending Directive 2008/98/EC on waste (hereafter referred to as the Waste Framework Directive, which is then transposed into national legislation in Ireland.

20. Other relevant primary legislative instruments that govern waste and resource management in the European Union are the:

- Landfill Directive (EU) 2018/850 of the European Parliament and of the Council (amending Directive 1999/31/EC on the landfill of waste);
- WEEE Directive (EU) 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) (recast 2018/849/EC));
- Commission Directive (EU) 2015/1127 (amending Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives);
- Commission Regulation (EU) No 1357/2014 of 18 December 2014 replacing Annex III to the Waste Framework Directive;
- Council regulation (EU) 2017/997 of 8 June 2017 (amending Annex III to Directive 2008/98/EC of the European Parliament and of the Council as regards the hazardous property HP 14 'Ecotoxic');
- Extractive Waste Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC;
- EC Council Decision 2003/33/EC – establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.

21. The primary legislative instrument that governs waste management in Ireland is the Waste Management Act (WMA) 1996 (as amended) (hereafter the Waste Management Act (WMA)). The WMA is a key instrument that, among other legislation, implements the Waste Framework Directive in Ireland. The WMA (as amended) provides for a general duty on all not to hold, transport, recover or dispose of waste in a manner that causes or is likely to cause environmental pollution.

22. Other relevant Irish legislation and regulations related to waste include the following statutory instruments:

- European Union (Waste Directive) Regulations 2020 (hereafter referred to as the Waste Directive Regulations 2020);
- European Union (Waste Management) (Environmental Impact Assessment) Regulations 2020;
- European Union (Waste Directive) (Amendment) Regulations 2016;
- The European Communities (Waste Directive) Regulations 2011 (as amended);
- Circular Economy and Miscellaneous Provisions Act 2022;
- Waste Management (Collection Permit) Regulations 2007 (as amended);
- Waste Management (Facility Permit & Registration) Regulations 2007 (as amended);
- Waste Management (Licensing) Regulations 2004 (as amended);
- Waste Management (Shipments of Waste) Regulations 2007;
- The Environmental Protection Agency (Industrial Emissions) (Licensing) Regulations 2013.

23. There are two provisions set out in the Waste Directive Regulations of particular importance to construction and demolition (C&D) activities and waste prevention that impact the classification of resources that may have otherwise been considered waste:

- Article 27 - Where appropriate, some materials, such as uncontaminated soil and stones, may be classified as a by-product (and not as a waste) in accordance with Article 27 of the Waste Directive Regulations subject to meeting specific requirements as set out in the Regulations and guidance issued by the EPA. A by-product classification of the excavated materials would permit the use of

the material in non-waste licenced or permitted sites. Where contaminants are found (or where bitumen-based materials are present), the material will be classified as waste and will be removed from site to an appropriately licenced/permitted facility.

- Article 28 – "*Sets out the grounds by which a material, which is recovered or recycled from waste, can be deemed to be no longer a waste and complies with a set of end-of-waste criteria (substance/object to be used for specific purposes, a market or demand exists, fulfils technical requirements and no overall adverse impact to human health or the environment)"* (EPA Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects, 2021).

### 31.3.3 Policy

24. The overarching planning policy relevant to the CWP Project is described in EIAR **Chapter 2 Policy and Legislative Context**.

25. The assessment of the CWP Project against relevant planning policy is provided in the **Planning Report**. This includes planning policy relevant to waste and resource management.

### 31.3.4 Guidance

26. The principal guidance and best practice documents used to inform the assessment of potential impacts on waste and resource management are summarised below:

- Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects (EPA, 2021);
- IEMA Guide to: Materials and Waste in Environmental Impact Assessment (hereafter referred to as the IEMA Guidelines) (IEMA, 2020);
- Guidance on Waste Acceptance Criteria at Authorised Soil Recovery Facilities (EPA, 2020);
- Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous (EPA, 2019);
- Guidance on Soil and Stone By-products in the context of Article 27 of the European Communities (Waste Directive) Regulations 2011 (EPA, 2019);
- Design Manual for Roads and Bridges (DMRB) (UK) LA110 Material assets and waste (Highways England, Transport Scotland, Welsh Government & Department for Infrastructure NI, 2019);
- EU Construction & Demolition Waste Management Protocol (European Commission, 2016) (non-binding guidelines);
- Guidelines for the Management of Waste from National Road Construction Projects Revision 1 (TII, 2014); and
- Best Practice Guidelines for the Irish Wind Energy Industry (IWEA, 2012).

27. In addition to specific waste and resource guidance documents, the following guidelines were considered and consulted in the preparation of this chapter:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA, 2022);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Environment, Community and Local Government, 2018);
- Guidance on EIS and NIS Preparation for Offshore Renewable Projects (Department of Communications, Climate Action and Environment & Sustainable Energy Authority of Ireland, 2017);
- Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017); and

- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (EPA, 2003).

## 31.4 Impact assessment methodology

28. **Chapter 5 EIA Methodology** provides a summary of the general impact assessment methodology applied to the CWP Project, which includes the approach to the assessment of transboundary and inter-related effects. The approach to the assessment of cumulative impacts is provided in **Chapter 5, Appendix 5.1 CEA Methodology**.

29. The following sections confirm the methodology used to assess the potential impacts on waste and resource management.

### 31.4.1 Study area

30. The study area for the waste and resource management assessment has been defined on the basis of the availability of capacity for the waste materials generated by the CWP Project to be managed.

31. The assessment has had regard to the IEMA Guidelines, which state that a suitable study area should be established within which baseline data for materials and waste will be collected, with the definition of the study area depending on both the location of a development and the types of waste materials produced.

32. Where waste materials can be managed locally, the study area may be commensurately small. Where management is required at a regional, national, and international level, the study area would be expected to be defined accordingly. Therefore, the IEMA Guidelines recommend that two study areas be defined in terms of waste material generated and requiring management; the *development study area* and the *expansive study area*.

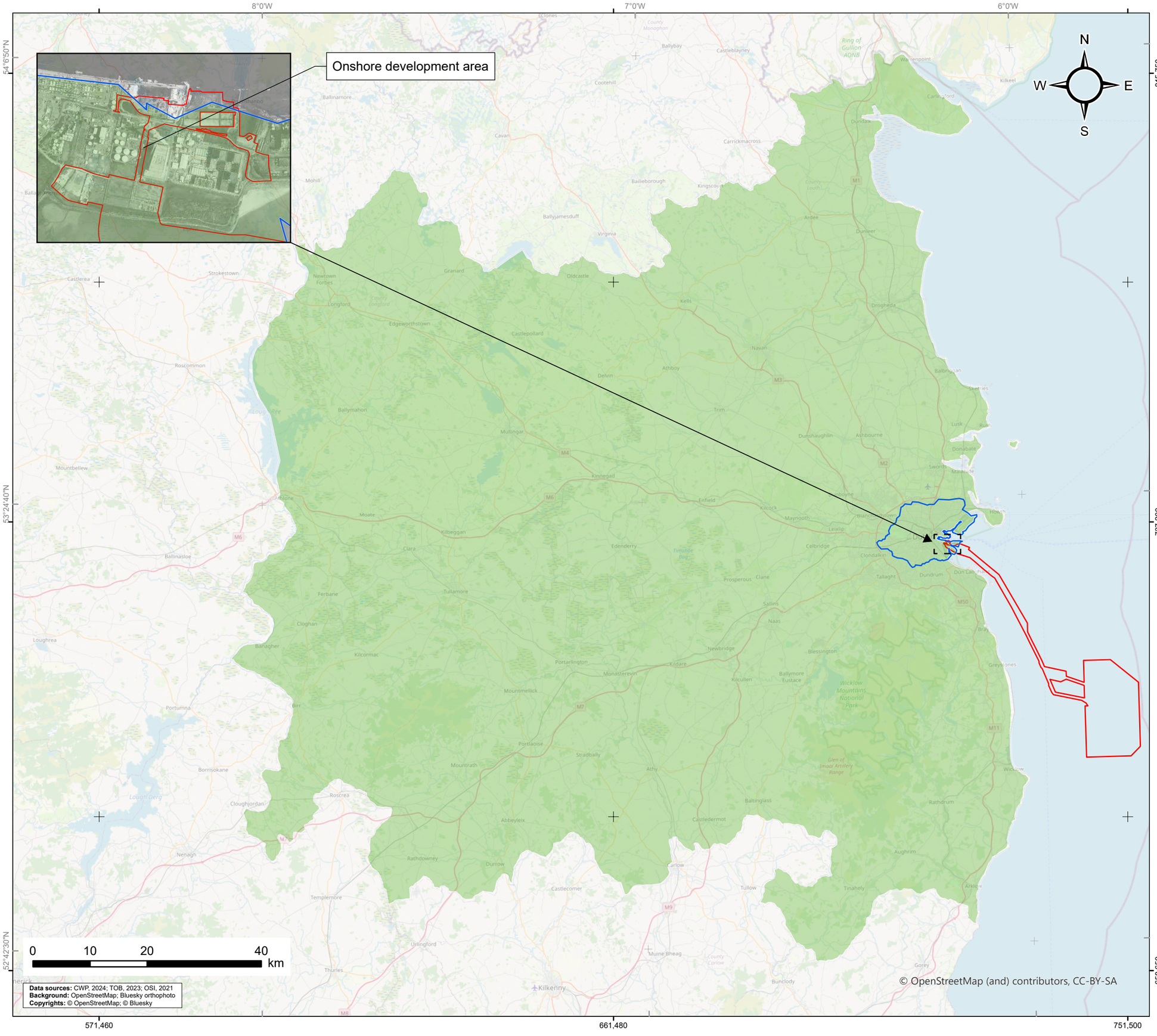
33. The *development study area* comprises the scheme or project footprint, i.e., the planning application boundary, including any areas required for temporary access, site compounds, working platforms, and other enabling activities (IEMA, 2020).

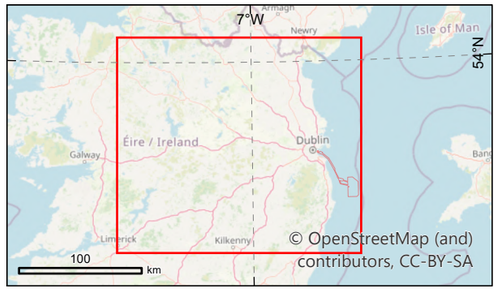
34. The *expansive study area* extends to the availability of waste management infrastructure capacity within a defined region (e.g., waste planning region) or across multiple regions as appropriate (IEMA, 2020).

35. At a regional level, in terms of waste management and planning, the CWP Project falls within the Eastern–Midlands Region (EMR). The EMR has twelve constituent local authorities, stretching from Dublin in the east, Louth to the north and Wicklow to the south.

36. For the purposes of this assessment, the *development study area* (i.e., the first study area) comprises the onshore development area. Dublin City Council (DCC) are the local authority responsible for the administration of waste and resource management within the development study area.

37. For the purposes of this assessment, based on the IEMA (2020) guidance, whereby the *expansive study* is considered to refer to a defined (e.g., waste planning) region, the *expansive study area* has been taken to consist of the waste management region where the onshore development area is located, namely the EMR.




**Legend**

- Planning application boundary – including onshore development area
- Dublin City Council administrative boundary
- Expansive study area – Eastern-midland region (EMR)

codling wind park

*Project:* Codling Wind Park

*Contractor:* TOBIN

*Website:* www.tobin.ie

# Figure 31.1
# Waste management: development and expansive study areas

*CWP doc. number:* CWP-TOB-ENG-08-01-MAP-0949

*Internal descriptive code:* ONSH.ALL - ALL.RLB..EM.WASTE.REGION - EIAR.FIG.31.01

*Size:* A3

*Scale:* 1:640,000

*CRS:* EPSG 2157

| Rev. | Updates | Date | By | Chk'd | App'd |
|---|---|---|---|---|---|
| 00 | Final for issue | 2024/08/15 | SP | DM/EA | ES |

### 31.4.2 Data and information sources

Site-specific surveys

38. Given the nature of this assessment, it was not necessary to carry out any site-specific field surveys.

39. Onshore site investigation (SI) work has been undertaken for the CWP Project. Information on the location and status of materials present within the onshore development area are detailed within **Chapter 19 Land, Soils and Geology** and **Appendix 19.5 Contamination Risk Assessment (CRA)**, which outlines the SI works undertaken and findings in relation to excavated materials and contamination potential.

Desk study

40. A comprehensive desk-based review was undertaken to inform the baseline for waste and resource management. Key data sources used to inform the assessment are set out in **Table 31-2**.

41. Further to this, the desk study included:

- A review of relevant and applicable policy and legislation;
- A review of existing and proposed waste management facilities was completed in the vicinity of the CWP Project and the EMR;
- A review of the description of the waste streams that will be generated during the construction, O&M and decommissioning phases of the CWP Project; and
- A review and proposal of relevant mitigation measures and/or design solutions (in accordance with the waste management hierarchy) to minimise and avoid waste generation where possible, as well as promoting appropriate waste management, across the CWP Project.

42. Data resources reviewed as part of the assessment are outlined in **Table 31-2**.

Table 31-2 Data sources

| Data | Source | Date | Notes |
|---|---|---|---|
| EPA National Waste Statistics | EPA | 2022 | The EPA produces the official statistics on waste generation and management in Ireland which are used for reporting Ireland's performance in meeting its legal obligations, for policy and waste management planning purposes and to inform the general public (EPA, 2022). |
| EPA Waste Licensing Database | EPA | 2023 | A review of existing and proposed waste management facilities was completed in the vicinity of the CWP Project and EMR. |
| EPA Geo Portal Web Application | EPA | 2023 | A review of mapped waste management facilities was completed in the vicinity of the CWP Project and EMR. |
| National Waste Collection Permit Office (NWCPO) Database | NWCPO | 2023 | The NWPCO provides a database of collection permit holders, WEEE register, and Local Authority Waste Facility Register. |

| Data | Source | Date | Notes |
|---|---|---|---|
| Dublin City Development Plan (2022–2028) | DCC | 2022 | The Dublin City Development Plan (2022–2028) sets out policies and objectives to guide how and where development will take place in the city and includes reference/policy related to waste management in the city. |
| Eastern–Midlands Region Waste Management Plan | DCC & EMR | 2015 | A statutory document prepared by the local authorities of the region and covering the period 2015–2021. |
| CWP Project Data: Construction waste volumes | CWPL | 2024 | Waste generation estimates during the pre-construction/site clearance, construction, and O&M phases of the CWP Project have been calculated by the design team based on current design information. |
| Construction & Demolition Waste Soil and Stone Recovery Disposal Capacity (Update Report 2020) | The Regional Waste Management Offices (RWMOs) | 2020 | A RWMO report detailing the capacity of the waste sector in Ireland to manage the current volumes of C&D waste along with projections of the amount of such waste likely to arise up to 2029. |

### 31.4.3 Impact assessment

43. The significance of potential effects has been evaluated using a systematic approach, based upon identification of the importance/value of receptors and their sensitivity to the project activity, together with the predicted magnitude of the impact.

44. The terms used to define receptor sensitivity and magnitude of impact are based on the IEMA Guidelines.

45. These criteria have been adopted in order to implement a specific methodology for the assessment of waste and resource management impacts from the CWP Project.

Waste and Resource Management Receptors

46. For each effect, the assessment identifies receptors sensitive to that effect and implements a systematic approach to understanding the impact pathways and the level of impacts on given receptors.

47. The IEMA Guidelines identify the ‘sensitive receptors’ in terms the impact and effects of waste generation on the environment.

48. The sensitive receptor in terms of waste generation and management is waste management infrastructure capacity (including landfill, which is a finite resource). The ongoing disposal of waste means there is a continued demand to expand existing facilities and also to develop new facilities. This requires the depletion of natural and other resources, which adversely impacts the environment (IEMA, 2020).

Sensitivity of receptor

49. The definitions of receptor sensitivity, as adapted from the IEMA Guidelines, for the purpose of the waste and resource management assessment are provided in **Table 31-3**.

Table 31-3 Sensitivity criteria for materials and waste (adapted from: EPA, 2022 and IEMA, 2020)

| Sensitivity | Receptor | Criteria |
|---|---|---|
| **Very High** | **Waste Management Infrastructure** | *Across construction and/or operation and maintenance phases, the baseline/future baseline (i.e., without development) of regional (or where justified, national), waste management infrastructure intake capacity is expected to:*<br>• reduce very considerably;<br>• end during construction or operation;<br>• is already known to be unavailable; or<br>• would require new capacity or infrastructure to be put in place to meet forecast demand. |
| **High** | **Waste Management Infrastructure** | *Across the construction and/or operation and maintenance phases, the baseline/future baseline (i.e., without development) of regional (or where justified, national), waste management infrastructure intake capacity is expected to reduce considerably as a result of wastes forecast.* |
| **Medium** | **Waste Management Infrastructure** | *Across the construction and/or operation and maintenance phases, the baseline/future baseline (i.e., without development) of regional (or where justified, national), waste management infrastructure intake capacity is expected to reduce noticeably as a result of wastes forecast.* |
| **Low** | **Waste Management Infrastructure** | *Across the construction and/or operation and maintenance phases, the baseline/future baseline (i.e., without development) of regional (or where justified, national), waste management infrastructure intake capacity is expected to reduce minimally as a result of wastes forecast.* |
| **Negligible** | **Waste Management Infrastructure** | *Across the construction and/or operation and maintenance phases, the baseline/future baseline (i.e., without development) of regional (or where justified, national), waste management infrastructure intake capacity (for inert and non-hazardous / hazardous) is expected to remain unchanged, or is expected to increase through a committed change in capacity.* |

Magnitude of impact

50. The scale or magnitude of potential impacts (both beneficial and adverse) depends on the degree and extent to which the CWP Project activities may change the environment, which usually varies according to project phase (i.e., construction, operation and maintenance, and decommissioning).

a. Construction phase – the magnitude of impact should be considered from the point at which site access is gained, through demolition, site remediation, enabling works, and construction, to development commissioning (IEMA, 2020).

b. O&M phase – the magnitude of impact should be assessed over the course of any one full and justifiably representative year within the first three years of commissioning (IEMA, 2020).

c. Decommissioning phase – like the construction phase, the magnitude of impact should be considered from the point at which site access is gained, through demolition, site remediation, enabling works, and decommissioning.

51. Factors that have been considered to determine the magnitude of potential impacts include:

- Area of influence/spatial extent – i.e., the development site, DCC, and the EMR;
- Level of deviation from baseline conditions (material/resources, current waste management capacity and statistics);
- The duration of impact; and
- Project timing.

52. The criteria for defining the magnitude of impact for the purpose of the waste and resource management assessment are provided in **Table 31-4**.

Table 31-4 Criteria for determining the magnitude of impact on materials and waste (adapted from: EPA, 2022 and IEMA, 2020)

| Magnitude | Receptor | Criteria |
|---|---|---|
| **Very High** | **Waste Management Infrastructure** | *Non-hazardous & Inert Wastes generated by the development will reduce regional* authorised waste management infrastructure intake capacity very considerably.*<br>*Hazardous Wastes generated by the development will reduce regional* authorised waste management infrastructure intake capacity very considerably.* |
| **High** | **Waste Management Infrastructure** | *Non-hazardous & Inert Wastes generated by the development will reduce regional* authorised waste management infrastructure intake capacity considerably.*<br>*Hazardous Wastes generated by the development will reduce regional* authorised waste management infrastructure intake capacity considerably.* |
| **Medium** | **Waste Management Infrastructure** | *Non-hazardous & Inert Waste generated by the development will reduce regional* authorised waste management infrastructure intake capacity noticeably*<br>*Hazardous Waste generated by the development will reduce regional* authorised waste management infrastructure intake capacity noticeably.* |
| **Low** | **Waste Management Infrastructure** | *Non-hazardous & Inert Waste generated by the development will reduce regional* authorised waste management infrastructure intake capacity minimally.*<br>*Hazardous Waste generated by the development will reduce waste management infrastructure intake capacity minimally.* |
| **Negligible** | **Waste Management Infrastructure** | *Negligible levels of waste generation and disposal are predicted from the development compared to national waste statistics.* |
| **Note** | * or where justified, national. | |

### Significance of effect

53. As set out in **Chapter 5 EIA Methodology**, an Impact Assessment Matrix (IAM) is used to determine the significance of an effect. In basic terms, the potential significance of an effect is a function of the sensitivity of the receptor and the magnitude of the impact, as shown in **Table 31-5**.

54. The matrix provides a framework for the consistent and transparent assessment of predicted effects across all technical chapters, however, it is important to note that individual assessments are based on relevant guidance and the application of professional judgement.

55. The matrix provides levels of effect significance ranging from Imperceptible to Profound, as defined in the Environmental Protection Agency (EPA) (2022) EIAR Guidelines. For the purposes of this assessment, effects rated as being 'Significant–Moderate' or above are considered to be significant in EIA terms.

56. Effects rated as being 'Moderate' are effectively significant/not significant subject to professional judgement, with a rationale provided for this in the main assessment. Effects identified as less than moderate significance are not considered to be significant in EIA terms.

Table 31-5 Impact assessment matrix for determination of significance of effect

| Sensitivity of Receptor | Magnitude of Impact | | | | |
|---|---|---|---|---|---|
| | Very High | High | Medium | Low | Negligible |
| Very High | Profound | Very Significant | Significant | Moderate | Slight |
| High | Very Significant | Significant | Significant - Moderate | Moderate–Slight | Not Significant |
| Medium | Significant | Significant–Moderate | Moderate | Slight | Imperceptible |
| Low | Moderate | Moderate–Slight | Slight | Not Significant | Imperceptible |
| Negligible | Slight | Not Significant | Imperceptible | Imperceptible | Imperceptible |

## 31.5 Assumptions and limitations

57. No particular limitations were identified/encountered in relation to the development of this chapter and the assessment of waste and resource management.

58. Waste facilities, and associated capacities, identified in the baseline to support the assessment are subject to change over time due to licencing and permitting requirements and reviews, as well as capacity being utilised/diminished over time due to operations.

59. As such, it should be noted that as available waste facilities and capacities are likely to change throughout the course of the CWP Project, a review of available capacity will be required prior to commencement of the Project.

60. However, through regional and national waste management planning, policy, strategy, and legislation, sufficient capacity should continue to be provided.

## 31.6 Existing environment

61. The following sections provide a description of the baseline conditions for the onshore development area where the OTI is situated, as well as a review of the existing environmental nationally in the context of waste and resource management.

### 31.6.1 Onshore development area

62. The onshore development area is located on the Poolbeg Peninsula, situated on the east side of Dublin City, adjacent to both Dublin Bay and the River Liffey, and east of the River Dodder and Grand Canal Dock.

63. The Poolbeg Peninsula is an area of land which has gradually been reclaimed since approximately the 1960's. The area is characterised by heavy industrial development, including port facilities (including berthing, docking, and storage), wastewater treatment, and thermal waste treatment. In terms of Land Use, CORINE 2018 land cover mapping, available via the EPA Geo Portal, identifies the area as Land type 121 Artificial Surfaces – Industrial, commercial and transport units. There is a network of public and private roads across the peninsula, and areas of car parking at the eastern end of the peninsula to service recreational activities in the area, such as the Great South Wall walk and sea swimming.

64. A number of Waste and Industrial Licensed (Industrial Emissions (IE)/ Integrated Pollution Control (IPC)) facilities have been identified in the vicinity of the onshore development area, on the Poolbeg Peninsula, including:

- W0232 – Dublin Waste to Energy Limited;
- P1002 – The Hammond Lane Metal Company Limited;
- P0486 – Synergen Power Limited;
- P1022 – Dublin Port Company;
- P0579 – Electricity Supply Board (ESB) North Wall;
- W0036 – Indaver Ireland Limited Dublin Port;
- P0086 – Irish Tar & Bitumen Suppliers.

65. The Ringsend Wastewater Treatment Plant (WWTP), operating under the Wastewater Discharge Licence D0034-01 Uisce Éireann, serving the Greater Dublin Area Agglomeration, is situated to the south of the onshore substation site, and east of the onshore export cables.

66. Licence holders for discharge of trade effluent to surface water or groundwater identified in the vicinity include DCC Cooling Water Pump House (Poolbeg/Irishtown Wastewater Treatment Works), which operates under a Section 4 Discharge Licence (LDW/001/93).

Soil materials within the onshore development area

67. Earthworks within the onshore development area during the construction phase will result in the generation of quantities of material requiring waste and resource management, including removal off-site for recovery/disposal, or reuse where possible. The soils where the OTI is located comprise of Made Ground. Due to the historic uses and reclaimed nature of the Poolbeg Peninsula there is potential for contaminated material to be encountered during these construction works.

68. According to the SI reports by Causeway Geotech Ltd. (2018 and 2022/2023), the soils at the landfall, onshore export cables and onshore substation consists of Made Ground. Made Ground across the site is up to 7.0 meters below ground level (mbgl) and is described as light grey to greyish brown silty

sand and gravel with brick and shell fragments, root and rootlets, and occasional concrete and plastic pieces

69. The SI data indicates that material at the onshore substation site is predominantly C&D (concrete, brick, timber) and material at the landfall site is predominantly domestic and light industrial waste (paper, newspaper, plastic, bottles, timber).

70. A summary of the ground types encountered in the exploratory holes at the landfall and onshore export cables is listed below, in approximate stratigraphic order:

- Made Ground (gravel surface and C&D fill);
- Made Ground (C&D and historical organic waste);
- Marine beach deposits overlying Port Clay;
- Glacial Till: stiff to very stiff brown/grey sandy gravelly clay encountered across the site generally
- underlying port clay greater than 24mbgl; and
- Bedrock (Limestone): Rockhead was encountered at depths >24m comprising dark grey limestone.

71. A summary of the ground types encountered in the exploratory holes at the onshore substation site is listed below, in approximate stratigraphic order:

- Made Ground (gravel surface and C&D fill);
- Marine beach deposits overlying Port Clay;
- Glacial Till: stiff to very stiff brown/grey sandy gravelly clay encountered across the site generally
- Underlying port clay greater than 30mbgl; and
- Bedrock (Limestone): Rockhead was encountered at depths >37.50m comprising dark grey limestone.

72. It is anticipated that soils at the ESBN Network Cables will be of a similar nature/condition to those identified at the landfall, onshore export cables, and onshore substation; i.e., made ground.

73. The landfall embankment is vegetated with predominantly scrub habitat, such as butterfly bush and bramble. Japanese knotweed and other invasive species were also identified on the embankment – See **Chapter 21 Biodiversity**.

74. Contaminated soil is addressed in **Chapter 19 Land, Soils and Geology** and **Appendix 19-5 CRA**. Any contaminated material identified will be managed in accordance with appropriate procedures, and in line with legislative and EPA requirements.

### 31.6.2 C&D waste management

75. The baseline environment in terms of waste management, particularly relevant to the construction sector, is described in the following sections. Waste will be generated during the construction phase through activities including site clearance and excavation.

76. During the O&M phase of the CWP Project, it is predicted that only small amounts of waste will typically be generated by maintenance activities. The onshore substation will be unmanned, with scheduled and unscheduled maintenance activities taking place intermittently.

77. The key waste streams predicted to be generated by the CWP Project during the construction phase include:

a. C&D waste associated with the construction phase;

b. Excavated materials (soil, stone, existing historical MSW and C&D material present);

c. Municipal waste (generally small amounts); and

d. Hazardous waste (small amounts).

78. As mentioned, the onshore development area is situated within the DCC Local Authority area, which is within the EMR. The EMR was previously governed by the requirements set out in the EMR Waste Management Plan 2015–2021, which set the targets for waste management in the region. The three existing regional waste management plans have now been replaced by a new single National Waste Management Plan for a Circular Economy (NWMP). The plan was finalised and published in March 2024.

### 31.6.3 National waste statistics

79. The EPA reports on national waste generation statistics on a regular basis[1]. The latest reference year available in terms of C&D waste statistics is 2021[2], released in August 2023. The EPA reports that 9 million tonnes of C&D waste was managed in Ireland in 2021.

80. C&D waste generated increased by 10% to 9 million tonnes in 2021, up from 8.2 million tonnes in 2020. This represents an increase of nearly 0.8 million tonnes of C&D waste generated in 2020 (a 10% increase) (EPA, 2023). Overall, the annual quantity of C&D waste generated in Ireland has increased considerably from 2014 to 2019 and in 2021, corresponding with a steady increase in the level of construction activity nationally. The reversal of this trend in 2020 is attributable to the restrictions on the building industry associated with the Covid-19 pandemic.

81. In 2021, soil and stones (and similar material) made up the vast majority (85.1%) of C&D waste collected, remaining at a similar level as 2020 (84.4%). The next largest C&D waste types generated in 2021 were concrete, brick, tile and gypsum waste at 6.7% (remaining similar to 2020 at 6.4%), and mixed C&D waste at 4.0% (also remaining similar to 4.6% in 2020). The proportion of segregated (wood, glass, plastic (0.4%) and metal (2.8%)) C&D waste collected remained small at 3.2% in 2021, increasing from 3% in 2020.

82. Approximately 96% of C&D waste underwent final treatment in Ireland in 2021, with 4% exported abroad for final treatment (EPA, 2023). **Table 31-6** provides a breakdown of the composition of non-hazardous C&D waste in 2021.

83. Backfilling, a recovery operation carried out at authorised facilities, is the most significant treatment of C&D waste in Ireland. Most of the C&D waste generated in 2021 (85%) was backfilled while 7% went for disposal. Overall, 8% of C&D waste was recycled and 0.3% went for energy recovery. Backfilling is utilised where the waste is suitable for land improvement, for reclamation purposes of excavated areas, or engineering purposes for landscaping. In general, soil recovery facilities are usually quarries being restored, or sites where soil and stone is imported to raise natural ground levels. The prominence of backfilling as a final treatment operation reflects the high tonnages of waste soil and stones in the C&D waste stream (EPA, 2023).

84. In 2021, recycling was the main treatment operation for C&D metals (100%), waste bituminous mixtures (49%), and related segregated wood, glass and plastic waste (77%). The EPA (2023) states that *"Recycling rates for C&D waste could be improved by enhanced segregation of C&D waste into individual material streams, either at source or at waste processing facilities*".

[1] EPA, *National Waste Statistics for Ireland* - https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/ (accessed 10 May 2024)
[2] Construction & Demolition Waste Statistics for Ireland - https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/construction--demolition/ (accessed 10 May 2024)

85. Under the Waste Framework Directive, EU Member States must achieve a rate of 70% material recovery of non-hazardous, non-soil and stone C&D waste. In 2021, Ireland achieved 85% material recovery of such waste, surpassing the 70% target.

86. In terms of C&D waste statistics, the EPA states that *"Greater levels of C&D waste prevention can be achieved by employing best practice circular construction activities. This includes designing out waste, application of Article 27 by-product regulation and maximising the use of resources in line with the EPA's revised Best Practice Guidelines for the Preparation of Resource Management Plans for Construction & Demolition Projects."* (EPA, 2023).

87. The National Waste Statistics provide an indicative breakdown of the typical composition of C&D waste generated and this is set out in **Table 31-6** below. These figures may be considered as a guide only to the typical composition of C&D waste in Ireland.

88. C&D waste can vary depending on the nature of the development, and waste can vary significantly from one project to another, depending on the nature of the development and the waste management practises employed on-site.

Table 31-6 Composition breakdown for C&D Waste (Non-Hazardous) (EPA, 2021)

| **C&D Waste** | **Composition Breakdown*** | |
|---|---|---|
| Category | Tonnes | % |
| Soil, stone and dredging spoil | 7,696,287 | 85.1 |
| Concrete, brick, tiles & gypsum | 608,235 | 6.7 |
| Mixed C&D waste | 362,380 | 4.0 |
| Metals | 257,558 | 2.8 |
| Bituminous mixtures | 87,343 | 1.0 |
| Segregated wood, glass & plastic | 31,946 | 0.4 |
| **Total** | **9,043,749** | **100%** |

*Composition breakdown derived from the 2021 National Waste Statistics (EPA, 2023) for the C&D Waste Sector

89. The construction sector also generates hazardous waste e.g., lead-acid batteries, WEEE, asbestos, solvent-based paints/varnishes, pesticides, and waste oils. Hazardous waste arisings, such as batteries, WEEE, and waste oils and lubricants, are predicted during the CWP Project, although they are predicted to occur in smaller numbers compared to the overall levels of C&D wastes generated.

90. The latest EPA national waste data for hazardous waste was released in February 2024 for the latest reference year, 2022. Overall, 389,908 tonnes of hazardous waste was generated in Ireland in 2022, which was a decrease of 16% (c. 77,000 tonnes) on 2021 levels.

91. In 2022, the C&D sector generated 15% of Ireland's hazardous waste. The EPA (2024) states that this "*contribution depends on activity to redevelop of brownfield sites and on dredging works, which decreased in 2022. Construction and demolition waste also includes smaller amounts of asbestos, asphalt, and contaminated wood, concrete, bricks, metals, and tiles"*.

92. In 2022, c. 43% of hazardous waste was treated in Ireland, either at the site of generation or at hazardous waste facilities. Overall, 57% of Ireland's hazardous waste was exported to other European countries for treatment in 2022 (EPA, 2024).

93. In 2022, approximately 99% of contaminated soil arisings were treated at Irish hazardous waste facilities (EPA, 2024). Contaminated soil arisings reported in 2022 showed an increase of over 8,000

tonnes on 2021. The EPA (2024) note that contaminated soil arisings are due to activity at brown field sites, the development of which is favoured by the National Development Plan[3].

94. As mentioned, small amounts of municipal waste will be generated over the course of the CWP Project; this waste will typically be generated from activities associated with on-site office and welfare facilities, such as paper, packaging, food and canteen waste. Municipal waste is made up of household waste and commercial waste that is similar to household waste. The latest available EPA national waste data (published November 2023) refers to the latest reference year, 2021. In 2021, Ireland generated 3.17 million tonnes of municipal waste, 41% of which was recycled. Of the municipal waste generated in 2021, 57% was from households and 43% was from commercial sources.

### 31.6.4 C&D soil and stone recovery/disposal capacity relative to the EMR

95. In 2020, the Regional Waste Management Planning Offices (RWMPOs) produced a report to quantify and analyse national capacity within the market for the management of soil and stone waste, including hazardous material, based on 2018 data. This report is an update to the Soil and Stone Recovery/Disposal Capacity report published in 2016. The report also details data with respect to waste concrete and other C&D waste. The report provides a 10-year forecast, predicting the volumes of soil and stone, concrete, and other C&D waste generation for the period 2019–2029.

96. In terms of capacity in the EMR, the report concludes that:

    a. *"Licensed capacity is most prominent in the EMR which has a healthy supply of active capacity and substantial new capacity due to come on stream. The Region contains 80% of the active national capacity";*

    b. *"New licensed facilities are also due to come on stream. Future capacities (new applications and un-commenced operations) exceed 2.1m tonnes nationally, with 73% of this capacity planned for the EMR";*

    c. *"The urban centres of Dublin and Cork which are a focal point for development and construction are (or will be) well served by licensed capacity";*

    d. *"Permitted and registered soil recovery facilities are more prevalent than licensed capacity with locations in almost every county.".*

97. At the end of 2018 there were 325 registered and permitted facilities nationally, with an estimated 5.2m tonnes lifetime capacity remaining by the end of 2018. The report notes *"the reported remaining capacity and intake data at permitted and registered facilities is an under-estimation due to incomplete rates of reporting".* Policy within the regional waste management plans to preferentially support development of larger capacity facilities is acknowledged, and this will remain as on ongoing focus for the NWMP.

98. There is an increasing demand for inert landfill capacity as construction and development at brownfield sites in urban centres grows. In 2018, nationally there were four active inert facilities, all located in the EMR; two of these facilities, located in Fingal and Kildare, have considerable remaining capacity.

99. The report states that the COVID-19 pandemic will have a significant impact on the generation of C&D waste with an unexpected and severe drop in C&D waste and soil and stone wastes generated.

100. The report also noted the determination of soil and stone materials as a by-product is increasing.

[3] Project Ireland – National Development Plan 2021-2030 available at: https://www.gov.ie/en/publication/774e2-national-development-plan-2021-2030/

101. Data indicates that current capacity for the acceptance of non-hazardous soil wastes for disposal is limited and disposal intake at active facilities has reduced. It also notes the ongoing management of construction and demolition waste (CDW) fines, i.e., the smaller particles generated from the processing of mixed construction and demolition waste principally sourced from skips, needs examination. At the time of reporting, over 200,000 tonnes (2018 data) of this waste type were being accepted at active non-hazardous landfills, principally for recovery purposes.

102. Export of hazardous soil and stone materials continues due to the lack of hazardous waste cells for disposal; however, the amount of hazardous waste treated in Ireland grew due to an improvement in indigenous treatment of contaminated soils.

103. The report also concludes that there are regional imbalances, with the EMR well served with available capacities and facilities accepting uncontaminated, inert and non-hazardous soil wastes. However. the Southern Region (SR) and Connaught Ulster Region (CUR) are not as well served, with a lack of licensed capacity for uncontaminated soil wastes, no dedicated inert waste facilities, and no long-term non-hazardous landfill facilities. Future capacity analysis needs to build on the analysis at these regional levels.

104. It should be noted that the above information provides an indication of waste management capacity in recent years, and that capacity status is fluid and experiences continuous change. Where there are pressures/demand on the waste capacity market, this will lead to new facility applications and potential updates to existing licences to meet capacity requirements.

### 31.6.5 Waste facilities located in the EMR

105. There are a number of permitted and licensed waste facilities located in the EMR for the management of waste from the construction industry as well as municipal sources. These include soil recovery facilities, inert C&D waste facilities, hazardous waste treatment facilities, municipal waste landfills, material recovery facilities, waste transfer stations and two waste-to-energy facilities. Licensed facilities, including those authorised to handle C&D waste and soil recovery, within the EMR counties immediately surrounding the CWP Project are listed in **Appendix 31-2**.

106. The currently licensed Waste Transfer Stations[4] situated in Dublin and the counties surrounding the CWP Project are outlined in **Appendix 31-2**. The location of licensed operational landfills within Dublin and the EMR counties surrounding the CWP Project are also noted in **Appendix 31-2**.

107. A review and compilation of WFPs and CoRs in the EMR and County Dublin have been undertaken. There are a number of facilities within the EMR and County Dublin which hold a Waste Facility Permit (WFP) or Certificate of Registration (CoR) from the applicable Local Authorities. These facilities accept soils and inert waste from C&D activities. The WFP and CoR database is a register for WFPs and CoRs issued by local authorities under the Waste Management (Facility Permit and Registration) Regulations, S.I. No. 821 of 2007, as amended.

108. The NWCPO provides access to this database, where WFPs and CoRs granted, reviewed, revoked, and expired can be reviewed. These facilities can also provide an avenue for acceptance of permitted quantities of soil and inert waste from C&D activities, such as those associated with the CWP Project.

[4] *Waste transfer is essentially a storage and/or bulking operation where waste forms the raw material for processes. Following checking and acceptance, they are stored, bulked and/or mixed for onward movement to a waste treatment and/or disposal facility* (EPA, 2011) - https://www.epa.ie/publications/licensing--permitting/industrial/ied/BAT-Waste-Transfer-&-Materials-Recovery---Final-Draft---December-2011-.pdf

### 31.6.6 Predicted future baseline

109. In the absence of the CWP Project, the waste and materials described in the waste assessment would not be generated. Therefore, the predicted future baseline in terms of waste and resource management, both regionally and nationally, is expected to continue in line with existing baseline trends and national waste statistics, without the addition of waste volumes associated with the CWP Project.

110. Existing regional and national waste and resource management requirements and objectives will remain in place and continue to be updated as relevant in line with EU and national legislation and policy.

111. It is noted that the onshore development area falls within the lands subject to development by Dublin Port Company as part of their Masterplan programme. Additionally, the northern part of the Poolbeg Peninsula, on which the onshore substation is located, is zoned Employment (Heavy) – Zone Z7 in the Dublin City Development Plan 2022–2028. Furthermore, part of the landfall area falls into the Poolbeg West Strategic Development Zone (SDZ). On this basis, the onshore development area could see some development (and a requirement for appropriate waste management) in future years, subject to planning permission.

112. Based on a review of the baseline environment, it is unlikely that climate change and natural trends will have a direct impact on the waste and resources environment. There are no other climate change or natural trend influences that are considered relevant to this assessment.

## 31.7 Scope of the assessment

113. The onshore EIA Scoping Report was published on the 6 May 2021. The Scoping Report was uploaded to the CWP Project website and shared with regulators, prescribed bodies, and other relevant consultees, inviting them to provide relevant information and to comment on the proposed approach being adopted by the Applicant in relation to the onshore elements of the EIA.

114. There were no direct responses to the scoping reports in relation to this waste and resource management assessment. General feedback received as part of the EIAR consultation process has been reviewed in the completion of this waste and resource management impact assessment.

115. Based on responses to the Scoping Report, further consultation and refinement of the CWP Project design, potential impacts to waste and resources scoped into the assessment are listed below in **Table 31-7**.

Table 31-7 Potential impacts scoped into the assessment

| Impact No. | Description of impact | Notes |
|---|---|---|
| Construction | | |
| Impact 1 | Generation and management of excavated materials | Relates to materials generated and requiring management during excavation activities of the construction phase. |
| Impact 2 | Generation and management of waste (other than excavated materials) associated with the installation of the OTI and landfall | Relates to waste materials generated and requiring management over the course of the construction phase. |

| Decommissioning | | |
|---|---|---|
| Impact 1 | Generation and management of excavated materials | Relates to materials generated and requiring management during excavation activities of the decommissioning phase. |
| Impact 2 | Generation and management of waste (other than excavated materials) associated with the decommissioning of the OTI and landfall | Relates to waste management during the decommissioning phase. Similar waste-generating activity to construction phase but to a lesser extent. |

116. Based on scoping, consultation and refinement of the CWP Project design, potential impacts to waste and resources scoped out of the assessment are listed below in **Table 31-8**.

Table 31-8 Potential impacts scoped out of the assessment

| Description of impact | Justification for scoping out |
|---|---|
| Consumption and management of key materials/resources during the construction, operational and maintenance, decommissioning phases. | Relates to the consumption and management of key materials/resources during the construction phase, O&M, and decommissioning phases.<br>In terms of consumption of key materials during the construction, O&M, and decommissioning phases, this has been scoped out of the assessment.<br>**Chapter 28 Climate - Carbon Balance Assesment** describes the potential impacts of the CWP Project's OTI and offshore infrastructure in terms of consumption/use of materials and resources during the construction, O&M and decommissioning phases. |
| Generation of waste associated with the OTI during the O&M phase | O&M phase impacts relating to waste management have been scoped out of the assessment. No significant impacts are predicted in terms of waste and resource management during the O&M phase of the OTI.<br>The onshore substation will be unmanned during the O&M phase, and the levels of waste generated will be minimal and are not predicted to have any significant effects.<br>Waste generated during the O&M phase of the OTI would be managed in compliance with relevant waste legislation. This will involve making sure that wastes generated are described properly, that the properties associated with the waste are known, and to ensure that persons involved in the transfer of waste hold the necessary authorisation to do so when removed from site to a suitably licenced waste management facility. |
| Generation of waste associated with the offshore infrastructure during the construction, O&M and decommissioning phases | With regard to the offshore infrastructure, waste generated during the construction, O&M and decommissioning phases will be managed on board the vessels and transported back to a base port (or ports). From there, all waste will be managed in line with applicable licenses and waste management legislation. The location of these ports is not known and is not expected to be known until post consent. On this basis, the consideration of waste management from the array site has been scoped out from this assessment. |

| Description of impact | Justification for scoping out |
|---|---|
| DAS Permit | The agreed approach for the Dumping at Sea (DAS) permit is to submit the DAS permit application for the CWP Project once planning permission for the CWP Project is granted or, at the earliest point, following submission of the planning application. Further details of this future consent process are provided in **Chapter 4 Project Description**. The DAS permit is not considered further in this assessment. |

## 31.8 Assessment parameters

### 31.8.1 Background

117. Complex, large-scale infrastructure projects with a terrestrial and marine interface such as the CWP Project, are consented and constructed over extended timeframes. The ability to adapt to changing supply chain, policy or environmental conditions and to make use of the best available information to feed into project design, promotes environmentally sound and sustainable development. This ultimately reduces project development costs and therefore electricity costs for consumers and reduces $CO_2$ emissions.

118. In this regard the approach to the design development of the CWP Project has sought to introduce flexibility where required, among other things, to enable the best available technology to be constructed and to respond to dynamic maritime conditions, whilst at the same time to specify project boundaries, project components and project parameters wherever possible, whilst having regard to known environmental constraints.

119. **Chapter 4 Project Description** describes the design approach that has been taken for each component of the CWP Project. Wherever possible the location and detailed parameters of the CWP Project components are identified and described in full within the EIAR. However, for the reasons outlined above, certain design decisions and installation methods will be confirmed post consent, requiring a degree of flexibility in the planning consent.

120. Where necessary, flexibility is sought in terms of:

- Up to two options for certain permanent infrastructure details and layouts such as the WTG layouts.
- Dimensional flexibility; described as a limited parameter range i.e. upper and lower values for a given detail such as cable length.
- Locational flexibility of permanent infrastructure; described as Limit of Deviation (LoD) from a specific point or alignment.

121. The CWP Project had to procure an opinion from An Bord Pleanála to confirm that it was appropriate that this application be made and determined before certain details of the development were confirmed. An Bord Pleanála issued that opinion on 25th March 2024 (as amended in May 2024) and it confirms that the CWP Project could make an application for permission before the details of certain permanent infrastructure described in **Section 4.3** of **Chapter 4 Project Description** is confirmed.

122. In addition, the application for permission relies on the standard flexibility for the final choice of installation methods and O&M activities.

123. Notwithstanding the flexibility in design and methods, the EIAR identifies, describes and assesses all of the likely significant impacts of the CWP Project on the environment.

### 31.8.2 Options and dimensional flexibility

124. Where the application for permission seeks options or dimensional flexibility for infrastructure or installation methods, the impacts on the environment are assessed using a representative scenario approach. A “representative scenario” is a combination of options and dimensional flexibility that has been selected by the author of this EIAR chapter to represent all of the likely significant effects of the project on the environment. Sometimes, the author will have to consider several representative scenarios to ensure all impacts are identified, described and assessed.

125. For Waste Management, the infrastructure design and installation techniques with potential to give rise to waste management impacts have been confirmed in the planning application and consequently, the assessment is confined to a single scenario for all construction and O&M phase impacts.

126. Design parameters relevant to the assessment of waste management are outlined in **Table 31-9** below.

### 31.8.3 Limit of deviation

127. Where the application for permission seeks locational flexibility for infrastructure, the impacts on the environment are assessed using a LoD. The LoD is the furthest distance that a specified element of the CWP Project can be constructed.

128. LoD within the onshore development area (landward of the high water mark) are noted below in **Table 31-10**. This chapter assesses the specific preferred location for permanent infrastructure, however, the potential for the LoD to give rise to any new or materially different effects compared to those presented in **Section 31.10** of this chapter has been considered.

129. For waste management, a conclusion is provided in **Table 31-10**, which confirms that the LoDs for the permanent infrastructure relevant to waste management will not give rise to any new or materially different effects. The LoDs are therefore not considered further within this assessment.

Table 31-9 Design parameters relevant to assessment of waste and resource management

| Impact | Detail | Value | Notes / Assumptions |
|---|---|---|---|
| Construction | | | |
| **Impact 1**: Generation and management of excavated materials | Installation methods and effects | Tonnes | This impact relates to the generation and management of excavated materials during the construction phase. |
| | Volume of excavated material generated during the construction phase of the OTI and landfall (tonnes) | 164,443 | |
| | Surplus of excavated material for recovery/disposal off-site (aggregate and soil) during the construction phase of the OTI and landfall (tonnes) | 165,299 | |
| **Impact 2**: Generation and management of waste (other than excavated materials) associated with the installation of the OTI and landfall | Installation methods and effects | Tonnes | This impact relates to the generation and management of construction waste associated with the installation of the OTI and landfall and not including excavated materials for recovery/disposal off-site |
| | Overall volumes of construction waste arisings generated during the construction phase of the OTI and landfall | 4,108 | |
| Operations and maintenance | | | |
| n/a | n/a | n/a | n/a |

| Impact | Detail | Value | Notes / Assumptions |
|---|---|---|---|
| Decommissioning | | | |
| **Impact 1**: Generation and management of excavated materials<br><br>**Impact 2**: Generation and management of waste (other than excavated materials) associated with the decommissioning of the OTI and landfall | It is recognised that legislation and industry best practice change over time. However, for the purposes of the EIA, at the end of the operational lifetime of the CWP Project, it is assumed that all OTI will be removed where practical to do so. In this regard, for the purposes of an assessment scenario for decommissioning impacts, the following assumptions have been made:<br>• The TJBs and onshore export cables (including the cable ducting) shall be completely removed.<br>• The landfall cable ducts and associated cables shall be completely removed.<br>• The underground tunnel, within which the onshore export cables will be installed shall be left in situ and may be reused for the same or another purpose.<br>• The onshore substation buildings and electrical infrastructure shall be completely removed.<br>• The reclaimed land, substation platform, perimeter structures and the new access bridge at the onshore substation site will remain in situ and may reused for the same or another purpose.<br>• The ESBN network cables (including the cable ducting) shall be completely removed.<br><br>The general sequence for decommissioning is likely to include:<br>• Dismantling and removal of electrical equipment;<br>• Removal of ducting and cabling, where practical to do so;<br>• Removal and demolition of buildings, fences, and services equipment; and<br>• Reinstatement and landscaping works.<br><br>Closer to the time of decommissioning, it may be decided that removal of certain infrastructure, such as the TJBs, landfall cable ducts and associated cables, onshore export cables and ESBN networks cables, would lead to a greater environmental impact than leaving the components in situ. In this case it may be preferable not to remove these components at the end of their operational life. In any case, the final requirements for decommissioning of the OTI, including landfall infrastructure, will be agreed at the time with the relevant statutory consultees.<br><br>It is anticipated that for the purposes of an assessment scenario, impacts will be no greater than those identified for the construction phase. | | |

Table 31-10 Limit of deviation relevant to assessment of waste and resource management

| Project component | Limit of deviation | LoD impact summary |
|---|---|---|
| TJBs | 0.5m either side (i.e., east/west) of the preferred TJB location | No potential for new or materially different effects. |
| Landfall cable ducts | Defined LoD boundary (see **Chapter 4 Project Description**) | No potential for new or materially different effects. |
| Location of onshore substation revetment perimeter structure | Defined LoD for sheet piling at toe of the revetment | No potential for new or materially different effects. |

## 31.9 Primary mitigation measures

130. Throughout the evolution of the CWP Project, measures have been adopted as part of the evolution of the project design and approach to construction to avoid or otherwise reduce adverse impacts on the environment. These mitigation measures are referred to as 'primary mitigation'. They are an inherent part of the CWP Project and are effectively 'built in' to the impact assessment.

131. Primary mitigation measures relevant to the assessment of waste and resource management are set out in **Table 31-11**.

Table 31-11 Primary mitigation measures

| Project Element | Description |
|---|---|
| Construction, Operation and Maintenance, and Decommissioning Phases | No specific primary mitigation has been proposed in relation to waste and resource management. |

## 31.10 Impact assessment

### 31.10.1 Construction phase

132. The potential environmental impacts arising from the construction of the CWP Project are listed in **Table 31-7** along with the parameters against which each construction phase impact has been assessed. A description of the potential effect on waste and resource management receptors caused by each identified impact is given below.

Impact 1: Generation and management of excavated materials

133. This relates to excavated materials generated and requiring management during site clearance and excavation activities, as part of the construction phase.

134. The key activities requiring the excavation and management of surplus excavated material are the:

- Initial site clearance and site-preparation activities;
- Open-cut excavations through the embankment at the landfall
- Excavation of the 3 No. temporary tunnel shafts;
- Management of waste arisings from the tunnel boring works for the onshore export cables;
- Preparation of the platform level at the onshore substation site, including management of existing stockpiles at this site;
- Excavation of the DPC turning circle at the onshore substation site;
- Open-cut excavations for the ESBN network cables; and
- Management of waste arisings from the HDD works for the ESBN network cables.

135. According to the latest figures for the National Waste Statistics published by the EPA, soils, stone, and dredging material generated in Ireland in 2021 was 7,696,287 tonnes.

136. The estimated figure for excavated materials requiring removal off-site for recovery/disposal during the construction phase of the OTI and landfall is 165,299 tonnes. This assumes that all of this excavated material is not reused on site and would require off-site recovery/disposal. This is estimated to equate to c. 1% of the annual volume for soils, stone, and dredging material generated in Ireland in 2021.

Table 31-12 Estimated soil and aggregate material requiring removal off-site (tonnes/$m^3$)

| Aggregate and Soil (Excavated Material) for Removal Off-site | Tonnes |
|---|---|
| Landfall: TJB excavation, trench from TJBs to the tunnel shaft and road around TJBs | 21,577 |
| Landfall: open-cut excavation from rear to front berm and temporary access ramp | 17,171 |
| Onshore export cable: tunnel (inc. shaft excavation, compound clearance, and tunnel bore arisings) | 40,554 |
| Onshore substation and ESBN network cables | 85,997 |
| **Overall Total** | **165,299** |

137. Although the 165,299 tonnes provides a comparative indication of the volume of soil and aggregate materials to be disposed compared to the latest figures for soils, stone, and dredging material generated in Ireland (EPA National Waste Statistics 2021 reporting year), it is noted that the materials generated from within the onshore development area are expected to also contain a mix of C&D and organic materials, which are largely associated with the reclaimed nature of the area.

138. From the desk study and onshore SI works, it is expected that the general composition of soils within the onshore development area will consist primarily of Made Ground and is largely described as light grey to greyish brown silty sand and gravel. At some locations, such as the landfall area and onshore substation stockpiles, the material for disposal will also contain mixed C&D waste (such as brick, occasional concrete and plastic pieces) and organic historically landfilled materials.

139. The surplus excavated material will be stockpiled, tested, and classified prior to leaving site. It is expected that the excavated material from the onshore development area is likely to require recovery/disposal as either 17 05 04 (stone and soil), 17 09 04 (mixed C&D wastes)[5], 20 03 99 (municipal waste not otherwise specified), and/or 17 05 03 (soil and stones containing hazardous substances). Information on the location and status of materials present within the onshore development area are detailed in **Chapter 19 Land, Soils and Geology** and **Appendix 19.5 CRA**.

140. Additional amounts of bentonite will also be generated as part of the installation of the onshore export cables (associated with installation of the tunnel shafts and the tunnel boring) and ESBN Network Cables (use of HDD). For the tunnel and HDD works, a bentonite suspension will be used to help convey the soil cuttings out of the excavations. The bentonite and excavated material will be separated in a treatment plant, located in the temporary compounds. The bentonite will then be reused in the

[5] 17 09 classification relates to other construction and demolition wastes. Under this classification, 17 09 04 relates to mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 (i.e., does not contain mercury, PCB or other hazardous materials).

tunnelling/HDD process. At the end of these processes, any bentonite which is no longer needed is expected to require disposal as 01 05 04 (freshwater drilling muds and wastes).

*Receptor sensitivity*

141. **Appendix 31-2** lists the waste management facilities or sites available within the EMR which are currently accepting excavated and/or contaminated materials. Overall, it is predicted that there is suitable availability of capacity to accept the predicted volumes of surplus excavated materials within the wider Dublin area and EMR; therefore, waste management facilities/sites are considered to be of **Low** sensitivity.

*Magnitude of impact*

142. The estimated volumes of excavated materials that will require removal off-site are not considered significant, whereby there would be an impact on available waste management capacities for the EMR. There are a number of authorised waste facilities in the region suitable for the recovery, treatment or disposal of excavated materials from the CWP Project. The magnitude is therefore considered to be **Low**.

*Significance of effect*

**143.** The sensitivity of the waste management capacity receptor (i.e., waste management facilities/sites) in the region is considered to be **Low** and the magnitude of the impact is assessed as **Low**.

144. Therefore (as per the matrix in **Table 31-5**), an effect of permanent '**Not Significant**' adverse significance is predicted in terms of waste generation and waste management, which is not significant in EIA terms.

*Additional mitigation*

145. It is currently assumed that the excavated material from the OTI would not be reused on-site and will be taken off-site for recovery/disposal.

146. During the detailed design stage, maximising beneficial reuse of the excavated material on site will be prioritised over off-site disposal. The reuse of material will be subject to quality and contamination testing to confirm suitability in terms of composition for reuse.

147. Additionally, where feasible, classification for reuse as a by-product, on other construction site(s), under Article 27 will be considered.

148. A **CDWMP** has been prepared in accordance with the Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects, published by the EPA in November 2021. The **CDWMP** outlines the approach for on-site and off-site waste management during the construction phase of the CWP Project. The scope of the **CDWMP** includes principles of waste management that can be applied to most wastes that would be created during the construction phase. These are:

- Where waste generation cannot be avoided, waste disposal will be minimised;
- Opportunities for reuse of materials and wastes will be sought throughout the construction phase;

- Adhere to waste legislation for storage and handling on-site; and ensure that the relevant regulatory controls have been applied to the reuse, recycling, or recovery of waste on-site;
- No waste from the CWP project shall be deposited outside the planning application boundary unless it is at a facility that holds a valid environmental permit or suitable authorised exemption. Off-site waste management facilities are legally obliged to operate under an environmental permit (or an authorised exemption), which is in place to ensure that the site is operated in a manner to prevent emissions causing harm to human health or the environment;
- Ensure that excavated material proposed for recovery/disposal off-site will be subject to contamination testing, to confirm it meets the acceptance criteria for an appropriate waste management facility;
- Ensure that those who remove waste from site have the appropriate authorisation (i.e., are registered waste carriers); and those facilities that receive waste from the site hold a valid environmental permit or authorised exemption;
- Allocate space on-site for the storage of waste materials and ensure that storage areas and containers are clearly labelled (appropriate signage) so site workers know which wastes should be put there. Paved areas/impermeable surfaces may be required, as deemed necessary, to prevent direct contact with the ground;
- Hazardous waste must be stored separately from non-hazardous wastes to avoid contamination;
- Provide separate containers for dry recyclables, such as paper and cardboard, plastic, glass, wood, and metal at welfare facilities within temporary works areas. This would encourage recycling and increase the potential value of the recyclable items by avoiding contamination;
- Monitor the actual quantities of wastes produced during construction and update the **CDWMP** to allow comparison with waste arisings estimated prior to construction. Record the proposed waste management option (e.g., reuse on-site, recycle off-site, or dispose off-site) for each waste produced;
- Avoid oversupply of incoming construction materials which have the potential to become waste;
- All wastes that are removed off-site would be described on a waste transfer note or hazardous waste consignment note (as appropriate) that tracks the movement of the waste to the specified disposal or recovery facility;
- Should any asbestos-containing materials be encountered, these will be removed by a specialist asbestos removal contractor and disposed of as asbestos waste. All asbestos removal work must be carried out in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations, 2006 (S.I. No. 386 of 2006) and Safety, Health and Welfare at Work (Exposure to Asbestos) (Amendment) Regulations 2010 (S.I. No. 589/2010);
- The appointed contractors should identify appropriate staff that are responsible for waste management and ensure that all contractor staff are aware of the appropriate reuse, recovery, or disposal routes for each waste.

*Residual effect*

149. With the adoption of the mitigation measures outlined above and included in the **CDWMP** submitted as part of the planning application, it is predicted that the magnitude of effect will be Negligible. Therefore, a residual effect of permanent, likely**, imperceptible adverse significance** in terms of waste generation and waste management is predicted, which is not significant in EIA terms.

Impact 2: Generation and management of waste (other than excavated materials) associated with the installation of the OTI and landfall

150. This impact relates to the generation and management of waste arisings (other than excavated materials) associated with the construction phase of the OTI and landfall.

151. Construction work by its nature is likely to generate non-hazardous and hazardous waste during the course of on-site activities, including waste arisings from on-site office and welfare facilities, and off-cuts, surplus or damaged materials or products from construction activity.

152. The estimated quantities of waste streams generated by the CWP Project are predicted to be low in the wider context of the national generation of waste materials.

153. Composition of construction waste steams may vary significantly depending on the type of project; however, construction waste streams will typically include the following non-hazardous fractions: mixed C&D, metals, concrete, brick, tiles, ceramics, liquids, such as from on-site welfare facilities and wheel washing. Typical types of hazardous waste fractions generated during construction works may include: liquid fuels, lubricants, paints, WEEE (including batteries), and cable materials.

154. The latest National Waste Statistics figures published by the EPA for Mixed C&D waste in Ireland was 362,380 tonnes. From a review of the estimated figures for Mixed C&D waste generated during the construction phase, it is estimated to that this would equate to c. 0.2% of the annual mixed C&D waste volumes for Ireland in 2021.

155. In terms of other construction waste streams generated during the construction phase (concrete, brick, tiles and ceramics, wood or timber, plastic, glass, bituminous mixtures, mixed metals), the estimated combined total of these streams predicted to be generated during the construction phase are very small, equating to c. 0.5% or less than the annual waste volumes for these individual waste streams for Ireland in 2021.

Table 31-13 Estimated Waste Volumes (Tonnes) during the Construction Phase

| Waste Types | Volume in Tonnes |
|---|---|
| Mixed C&D Waste | 829 |
| General Office Waste | 48 |
| Organic Waste | 9 |
| Plastic | 15 |
| Glass | 7 |
| Concrete, Brick, Tiles and Ceramics | 3,017 |
| Wood or Timber | 37 |
| Bituminous Mixtures | 10 |
| Mixed Metals | 105 |
| WEEE | 12 |
| Paper and Cardboard | 7 |
| Oil and Liquid Fuel Waste | 9 |
| **Total** | **4,108** |

156. The EPA's most recent statistics regarding hazardous waste generated (2022 reporting year) show that 15% of hazardous waste generated in Ireland comes from the C&D sector; combined hazardous waste streams equated to c. 380,581 tonnes in Ireland in 2022 (EPA, 2024). The contribution depends on activity to redevelop brownfield sites and on dredging works, which decreased in 2022. Construction and demolition waste can also include smaller amounts of asbestos, asphalt, and contaminated wood, concrete, bricks, metals, and tiles. (EPA, 2024). Hazardous C&D waste volumes generated during construction of the onshore infrastructure are predicted to be very small compared to the annual waste volumes for these C&D waste streams for Ireland in 2022.

157. Minimal amounts of other waste streams are predicted to be generated during the construction phase, including general office waste, organic waste, WEEE, paper and cardboard. The total volumes predicted for these streams during the construction phase are estimated to be negligible in comparison to the annual waste volumes for these waste streams in Ireland for their respective reference years (2021–2022).

*Receptor sensitivity*

158. **Appendix 31-2** lists the waste management facilities/sites available within the EMR which are currently accepting waste.

159. Overall, it is predicted that there is suitable availability of waste management capacity within Dublin and the wider EMR to accept the predicted construction phase waste volumes, therefore, waste management facilities/sites are considered to be of **Low** sensitivity.

*Magnitude of impact*

160. The estimated volumes of waste arisings that will require removal off-site for disposal, recovery or reuse is not considered significant whereby there will be an impact on available and predicted waste management capacities for Dublin or the EMR. The magnitude is therefore considered to be **Low**.

*Significance of effect*

161. The sensitivity of the waste management capacity receptor (i.e., waste management facilities/sites) in the region is considered to be **Low** and the magnitude of the impact is assessed as **Low**.

162. Therefore (as per the matrix in **Table 31-5**), an effect of permanent '**Not Significant'** adverse significance in terms of waste generation and waste management is predicted, which is not significant in EIA terms.

*Additional mitigation*

163. A **CDWMP** has been prepared in accordance with the Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects, published by the EPA in November 2021. The **CDWMP** outlines the approach for on-site and off-site waste management during the construction phase of the CWP Project. The scope of the **CDWMP** includes principles of waste management that can be applied to most wastes that would be created during the construction phase. Details of these are set out under the additional mitigation outlined for Impact 1 above.

164. These measures would promote sustainable waste management practices by maximising waste prevention, reuse, recycling, and recovery opportunities for material destined for off-site waste management. The target set for C&D waste management for the CWP Project is to exceed the national target of preparing for reuse, recovery, and recycling of 70% of non-hazardous C&D waste (excluding soil and stone). The appointed contractor will be made aware of this project target and will be required to engage suitably permitted/licenced waste contractors that will be able to provide a commitment to achieving, or exceeding, this target.

*Residual effect*

165. With the adoption of the mitigation measures outlined in the **CDWMP** submitted as part of the planning application, it is predicted that the magnitude of effect will be Negligible. Therefore, a residual effect of permanent, likely**, imperceptible adverse significance** in terms of waste generation and waste management is predicted, which is not significant in EIA terms.

### 31.10.2 Decommissioning phase

166. It is recognised that legislation and industry best practice change over time. However, for the purposes of the EIA, at the end of the operational lifetime of the CWP Project, it is assumed that all OTI will be removed where practical to do so. In this regard, for the purposes of an assessment scenario for decommissioning impacts, the following assumptions have been made:

- The TJBs and onshore export cables (including the cable ducting) shall be completely removed.
- The landfall cable ducts and associated cables shall be completely removed.
- The underground tunnel, within which the onshore export cables will be installed shall be left in situ and may be reused for the same or another purpose.
- The onshore substation buildings and electrical infrastructure shall be completely removed.
- The reclaimed land, substation platform, perimeter structures and the new access bridge at the onshore substation site will remain in situ and may reused for the same or another purpose.
- The ESBN network cables (including the cable ducting) shall be completely removed.

167. The general sequence for decommissioning is likely to include:

- Dismantling and removal of electrical equipment;
- Removal of ducting and cabling, where practical to do so;
- Removal and demolition of buildings, fences, and services equipment; and
- Reinstatement and landscaping works.

168. Closer to the time of decommissioning, it may be decided that removal of certain infrastructure, such as the TJBs, landfall cable ducts and associated cables, onshore export cables and ESBN networks cables, would lead to a greater environmental impact than leaving the components in situ. In this case it may be preferable not to remove these components at the end of their operational life. In any case, the final requirements for decommissioning of the OTI, including landfall infrastructure, will be agreed at the time with the relevant statutory consultees.

169. Appropriate decommissioning methodologies will be selected/designed in order to mitigate by avoidance any impacts in terms of waste management. Adherence with relevant legislation and guidance at the time of decommissioning will be required.

170. Activities associated with decommissioning are not predicted to exceed those assessed for the construction phase. Furthermore, in most cases, impacts are expected to be no greater than, and of a

similar type and magnitude to, those anticipated during the construction phase, but generally of a shorter duration and scale.

## 31.11 Cumulative impacts

171. A fundamental component of the EIA is to consider and assess the potential for cumulative effects of the CWP Project with other projects, plans, and activities (hereafter referred to as 'other development').

172. **Appendix 31.1** presents the findings of the cumulative effects assessment (CEA) for waste and resource management, which considers the residual effects presented in **Section 31.10** alongside the potential effects of other proposed and reasonably foreseeable other development.

173. With the adoption of the mitigation measures outlined within **Chapter 31 Waste and Resource Management** and included in the **CDWMP** submitted as part of the planning application, it is predicted that the magnitude of effect in terms of Impact 1 and Impact 2 in terms of waste generation and management during the construction phase will be 'Negligible'. Therefore, a residual effect of permanent, likely, '**Imperceptible**' adverse significance is predicted for both impacts, which is '**Not significant**' in EIA terms.

174. As the residual impacts are assessed as 'Imperceptible' they were not taken forward as there is no potential for them to contribute to a cumulative effect.

## 31.12 Transboundary impacts

175. There are no transboundary impacts with regard to waste and resource management as the onshore development area would not be sited in proximity to any international boundaries. Waste generated will be segregated and managed within Ireland's waste management network.

176. It is possible that, in some cases, waste entering the Irish waste management network may be exported abroad by waste operators for final treatment. However, if this was to occur, it is predicted that the proportion of the waste generated from the OTI which would end up abroad as part of final treatment activity would be negligible. Therefore, transboundary impacts are therefore scoped out of this assessment and are not considered further.

## 31.13 Inter-relationships

177. The inter-related effects assessment considers the potential for all relevant effects across multiple topics to interact, spatially and temporally, to create inter-related effects on a receptor group. This includes incorporating the findings of the individual assessment chapters to describe potential additional effects that may be of greater significance when compared to individual effects acting on a receptor group.

178. The term 'receptor group' is used to highlight the fact that the proposed approach to the inter-relationships assessment has not assessed every individual receptor considered in this chapter, but instead focuses on groups of receptors that may be sensitive to inter-related effects.

179. **Chapter 5 EIA Methodology** provides a matrix to show at a broad level where across the EIAR interactions between effects on different receptor groups have been identified.

180. The potential inter-related effects that could arise in relation to waste and resource management are presented in **Table 31-14**.

Table 31-14 Inter-related effects (phase) assessment for waste and resource management

| Impact/Receptor | Related chapter | Phase Assessment |
|---|---|---|
| **Impact 1**: Generation and management of excavated materials | **Chapter 19 Land, Soils and Geology** | There is potential for inter-related effects between waste and resource management and land, soils, and geology impacts during construction and decommissioning phases of the onshore CWP Project.<br>Earthworks will result in the generation of quantities of material requiring waste and resource management, including removal off-site for disposal or reuse where possible<br>The greatest potential for interactions is likely to occur if contaminated material is encountered during intrusive works in the construction phase .<br>However, mitigation measures to prevent impacts are presented in **Chapter 19 Land, Soils and Geology, Appendix 19.5 CRA** and the **CDWMP.**<br>As a result of these mitigations, the assessment predicts no significant effects in terms of waste and resource management.<br>Therefore, is not anticipated that any inter-related effects on waste and resource management will be produced that are of greater significance than those already identified. |
| **Impact 1**: Generation and management of excavated materials.<br><br>and<br><br>**Impact 2**: Generation and management of waste (other than excavated materials) associated with the installation of the OTI and landfall | **Chapter 28 Climate – Carbon Balance Assessment** | There is potential for inter-related effects between waste and resource management and climate impacts during construction and decommissioning phases of the onshore CWP Project.<br>Embodied carbon associated with the generation and management of waste and consumption of material resources associated with the construction and decommissioning phases will have a negative, but not significant, effect on climate.<br>Mitigation measures to in terms of climate impacts are presented in **Chapter 28 Climate – Carbon Balance Assessment**. |

## 31.14 Potential monitoring requirements

181. No monitoring is required in relation to waste and resource management.

## 31.15 Impact assessment summary

182. This chapter of the EIAR has assessed the potential environmental impacts on waste and resource management from the construction, O&M, and decommissioning phases of the CWP Project. This section, including **Table 31-15**, summarises the impact assessment undertaken, and confirms the significance of any residual effects following the application of additional mitigation.

183. Potential construction phase impacts in terms of waste and resource management scoped into the assessment were; the generation and management of excavated materials (Impact 1), which relates to excavated materials generated and requiring management during site clearance and excavation activities, as part of the construction phase; and the generation and management of waste (other than excavated materials) associated with the installation of the OTI and landfall (Impact 2), which relates to the generation and management of waste arisings (other than excavated materials) associated with the construction phase of the OTI and landfall.

184. Once operational, the CWP Project will have a negligible impact on the waste management infrastructure. The onshore substation will be unmanned during the O&M phase, and overall, levels of waste generated will be minimal and not predicted to have significant effects.

185. With respect to impacts associated with the generation of excavated material, the CWP Project has assumed that all excavated material would require recovery/disposal off-site. The estimated volumes for excavated material generated by the project requiring recovery/disposal off-site would equate to c. 1% of the annual volume for soils, stone, and dredging material generated in Ireland, as recorded in the 2021 EPA National Waste Statistics. The estimated volumes of excavated materials that will require removal off-site were not considered significant in terms of the available waste management capacities for the EMR.

186. It is recognised that industry best practice, rules, and legislation change over time, which restricts the undertaking of a comprehensive assessment at this stage. Nonetheless, activities associated with decommissioning are not predicted to exceed those assessed for the construction phase. Furthermore, in most cases, impacts are expected to be no greater than, and of a similar type and magnitude to, those anticipated during the construction phase, but generally of a shorter duration and scale.

187. Waste generation will be avoided or minimised in so far as is reasonably possible, options for reuse, including for excavated material, will be considered, and the **CDWMP** submitted as part of the planning application will be implemented and adhered to by all personnel. Where any removal of material as waste is required as a result of the OTI installation, appropriate arrangements will be in place to manage any waste generated. Following the implementation of the primary and additional mitigation measures, it was predicted that there would be no residual impacts of greater than an imperceptible significance of effect. This is not significant in EIA terms.

Table 31-15 Summary of potential Impacts and residual effects

| Potential Impact | Receptor | Receptor Sensitivity | Magnitude of Impact | Significance of effect | Additional Mitigation | Residual effect |
|---|---|---|---|---|---|---|
| Construction | | | | | | |
| **Impact 1**: Generation and management of excavated materials | Waste and resource management receptors | Low | Low | Permanent, **Not Significant**, adverse (Not Significant) | None, other than that outlined within the **CDWMP** and **Chapter 19 Land, Soils and Geology**. | **Imperceptible** adverse (Not Significant) |
| **Impact 2**: Generation and management of waste (other than excavated materials) associated with the installation of the OTI and landfall | Waste and resource management receptors | Low | Low | Permanent, **Not Significant**, adverse (Not Significant) | None, other than that outlined within the **CDWMP**. | **Imperceptible** adverse (Not Significant) |
| Decommissioning | | | | | | |
| **Impact 1**: Generation and management of excavated materials | Waste and resource management receptors | Low | It is recognised that legislation and industry best practice change over time. However, for the purposes of the EIA, at the end of the operational lifetime of the CWP Project, it is assumed that all OTI will be removed where practical to do so. In this regard, for | | | |

| | | | |
|---|---|---|---|
| **Impact 2**: Generation and management of waste (other than excavated materials) associated with the decommissioning of the OTI and landfall | Waste and resource management receptors | Low | the purposes of an assessment scenario for decommissioning impacts, the following assumptions have been made:<br>• The TJBs and onshore export cables (including the cable ducting) shall be completely removed.<br>• The landfall cable ducts and associated cables shall be completely removed.<br>• The underground tunnel, within which the onshore export cables will be installed shall be left in situ and may be reused for the same or another purpose.<br>• The onshore substation buildings and electrical infrastructure shall be completely removed.<br>• The reclaimed land, substation platform, perimeter structures and the new access bridge at the onshore substation site will remain in situ and may reused for the same or another purpose.<br>• The ESBN network cables (including the cable ducting) shall be completely removed.<br>The general sequence for decommissioning is likely to include:<br>• Dismantling and removal of electrical equipment;<br>• Removal of ducting and cabling, where practical to do so;<br>• Removal and demolition of buildings, fences, and services equipment; and<br>• Reinstatement and landscaping works.<br>Closer to the time of decommissioning, it may be decided that removal of certain infrastructure, such as the TJBs, landfall cable ducts and associated cables, onshore export cables and ESBN networks cables, would lead to a greater environmental impact than leaving the components in situ. In this case it may be preferable not to remove these components at the end of their operational life. In any case, the final requirements for decommissioning of the OTI, including landfall infrastructure, will be agreed at the time with the relevant statutory consultees.<br>It is anticipated that for the purposes of an assessment scenario, impacts will be no greater than those identified for the construction phase. |

## 31.16 References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