Proposed Derrygreenagh Power Project
Environmental Impact Assessment Report

Chapter 16: Material Assets

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16.0 MATERIAL ASSETS

16.1 Introduction

16.1.1 This chapter of the Environmental Impact Assessment Report (EIAR) assesses the potential impacts on Material Assets as a result of the Proposed Development and Overall Project.

16.1.2 Material assets are resources that are valued and intrinsic to the Site and the surrounding area. With regard to Material Assets, the 2022 EPA EIAR Guidelines ("EPA Guidelines") state: *"Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure. Sealing of agricultural land and effects on mining or quarrying potential come under the factors of land and soils*."

16.1.3 This chapter will consider the potential impact to land use, built services and waste management as a result of the Proposed Development and Overall Project. Other resources, such as land, soil, water, air, traffic, human health and amenity resources are discussed in other chapters of the EIAR, and as such is not considered in this chapter: (**Chapter 7** (Air Quality), **Chapter 12** (Water), **Chapter 13** (Land, Soils & Geology), **Chapter 14** (Traffic) and **Chapter 15** (Population & Human Health).

16.1.4 A full description of the existing Site is presented in **Chapter 4** (Existing Site and Conditions), while details of the Proposed Development and Overall Project are presented in **Chapter 5** (The Proposed Development and Overall Project) of this EIAR.

16.1.5 The potential impacts associated with the Proposed Development and Overall Project, if any, are assessed with regard to the following existing land uses, built services and infrastructure (which have not already been addressed elsewhere in this EIAR), and as outlined in the EPA Guidelines (2022):

- Land Use.
- Electricity supply.
- Gas supply.
- Wastewater services (foul, process and surface water).
- Water supply.
- Telecommunications.
- Waste management.

Statement of Authority

16.1.6 The names of the consultants who prepared this Chapter are as follows:

- Rebecca Dunlea – Principal, AECOM
- Peter O'Connor – Technical Director, AECOM.

16.1.7 Details of professional experience are presented in EIAR **Appendix 1B** (refer to Volume II of the EIAR).

16.2 Methodology

Land Use and Built Services

16.2.1 There is no specific set of Environmental Impact Assessment (EIA) guidelines for assessing material assets. This assessment has been tailored to the Proposed Development and Overall Project using best practice guidelines which include:

- EPA (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*.
- IEMA (2020). *IEMA Guide to Materials and Waste in Environmental Impact Assessment*.

16.2.2 This assessment was carried out by a desktop study from publicly available information and from information provided by the Applicant to determine the baseline environment existing utility arrangements within the study area which could be impacted as a result of the Proposed Development and Overall Project.

16.2.3 The Offaly County Development Plan 2021-2027, Westmeath County Development Plan 2021-2017, Aerial imagery (Google / Bing) and Ordnance Survey Ireland, EPA online map viewer, 1:50,000 Discovery Mapping, Google search and previous planning applications were among the sources of reference material used for this desk study.

16.2.4 This EIAR chapter and the assessment contained within has been carried out in accordance with the appropriate guidance (EPA Guidelines*)* as outlined in **Chapter 1** Introduction, **Table 1.2**.

Study Area

16.2.5 The Study Area is the Proposed Development and the Overall Project area, as well as the surrounding area in relation to land use and the utilities network (built services) that could be impacted by the Proposed Development and Overall Project. This is considered a reasonable distance in terms of sensitive land uses and built services asset receptors (such as residential receptors) with respect to the Proposed Development and Overall Project.

Waste Management

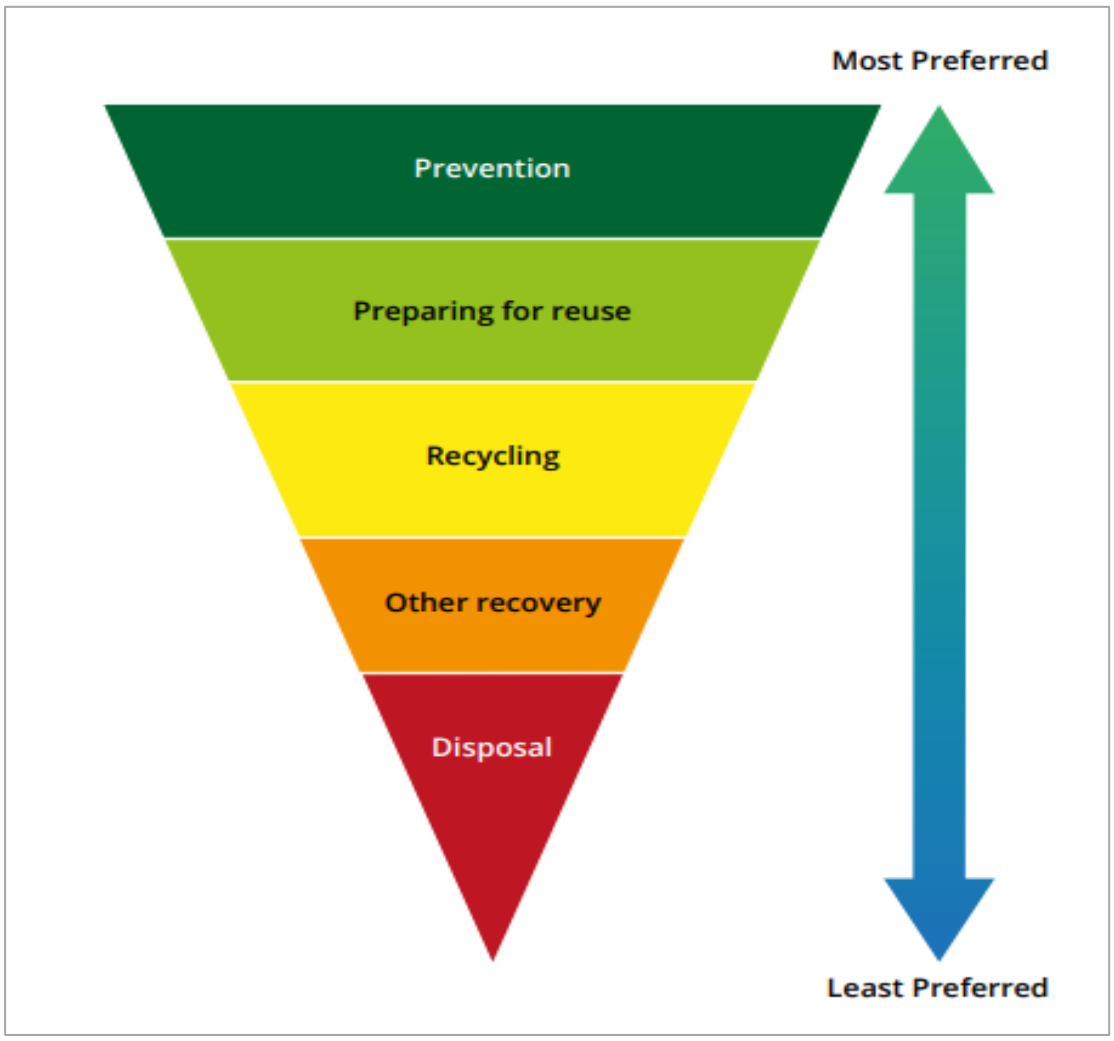
16.2.6 Waste management is subject to EU, national and regional waste legislation which defines how waste materials must be managed, transported, and treated. The overarching EU legislation is the Waste Framework Directive (2008/98/EC) which is transposed into Irish legislation. Waste disposal and recovery activities in Ireland require authorisation in accordance with the Waste Management Act 1996 as amended.

16.2.7 During the demolition (of the existing Derrygreenagh Works) construction, operational (including maintenance) and decommissioning phases of the Proposed Development and Overall Project, there will be an increased emphasis on waste prevention, in line with the waste hierarchy, through established principles such as designing out waste and the use of green procurement, refer to **Plate 16.1**.

16.2.8 For the purpose of this EIAR, waste is defined as per the European Waste Framework Directive (Directive 2008/98/EC) as *'any substance or object which the holder discards or intends or is required to discard'*.

16.2.9 For the purpose of this assessment, waste has been assessed with reference to waste arising during demolition, construction, operational and decommissioning phase.

Plate 16.1: Waste Hierarchy



Source: *EPA 2021. Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects*

16.2.10 There is no specific set of Environmental Impact Assessment (EIA) guidelines for assessing material assets or waste, so this assessment has been tailored to the Proposed Development and Overall Project using best practice guidelines which include:

- IEMA (2020). *IEMA Guide to Materials and Waste in Environmental Impact Assessmen*t.
- GOI (2020). *Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020-2025.*
- EMR (2015). *Eastern-Midlands Region Waste Management Plan 2015-2021*.
- EPA (2022). *National Waste Statistics Summary Report for 2020*.

16.2.11 The strategy for the management of waste from the construction phase is in line with the requirements of the EPA Guidelines, *Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects published in 2021.*

Study Area

16.2.12 The study area for the assessment of impacts related to Waste Management have been defined in line with the IEMA Guidelines. The definition of a study area, as per the IEMA Guidelines, will depend on both the location of a development, the types of materials / resources required and waste to be generated. Where materials / resources can be sourced, and wastes managed, locally, the study area may be commensurately small.

16.2.13 Two types of study areas are defined in the IEMA guidance:

- a 'Project Study Area' – relevant to waste generation; and
- an 'Expansive Study Area' – relevant to management of waste.

16.2.14 The Study Area for waste arising from the construction of the Proposed Development and Overall Project includes any temporary land requirements during construction such as temporary construction compounds and peat depositions areas.

16.2.15 The Study Area for assessing impacts of non-hazardous waste on waste arisings and inferred waste management capacity comprises the whole of Ireland due to the need to consider all available waste management infrastructure capacity. Waste management capacity is inferred from national waste arisings since data for national waste management capacity is not readily available.

16.2.16 The Study Area for assessing impacts of hazardous waste on waste arisings and on inferred waste management capacity also comprises the whole of Ireland, although it is noted that a proportion of hazardous waste arising in Ireland is managed outside of Ireland, refer to **Table 16.8**.

Methodology for Determining Construction Effects

16.2.17 The potential impacts of the Proposed Development and Overall Project with regards to waste are the effects that waste arisings generated on-site will have on the capacity of waste management infrastructure in the study area and on meeting national targets for waste recovery.

16.2.18 The likely demolition and construction phase impacts will be associated with the management of waste from:

- demolition works (on main Derrygreenagh Works);
- surplus or damaged construction materials;
- packaging;
- maintenance of plant and equipment used for construction;
- peat management; and
- construction workforce activities.

16.2.19 In the absence of specific guidance or requirements for Ireland, professional judgement and available guidance is used to determine the magnitude and sensitivity, which will determine the significance of effect, by the following approach:

- Establishing the baseline waste arisings (and inferred infrastructure capacity) for the expansive study area.
- Estimating the likely types and quantities of waste that will be generated by the Proposed Development and Overall Project and the likely extent to which these will be recycled or recovered or require disposal.

- For each category of waste, comparing the likely waste arisings from the Proposed Development and Overall Project to the baseline waste arisings and confirming whether sufficient management capacity is expected to be available.
- Assessing whether the Proposed Development and Overall Project conforms to relevant European and Irish waste policies and strategies, specifically regarding targets for the recovery of non-hazardous construction and demolition waste (excluding naturally occurring soil and stones (list of waste code 17 05 04[1])).

16.2.20 The criteria used for assessing the magnitude of impacts and significance of effects are shown in **Table 16.1** and are combined with the EPA Guidelines on generalised degrees of effect significance that are commonly used in EIA and the guidance on magnitude and significance in the IEMA guide to *Materials and Waste in Environmental Impact Assessment* Guidance (2020) for a proportionate approach.

Table 16.1: Magnitude of Impact of Effect Criteria

MAGNITUDE OF IMPACT IEMA GUIDANCE / EPA GUIDELINES	EFFECT IEMA GUIDANCE	SIGNIFICANCE OF EFFECT IEMA GUIDANCE / EPA GUIDELINES	CRITERIA
No Change / Imperceptible	Neutral	Neutral / Imperceptible	• Project achieves 100% overall material recovery / recycling (by weight) of non-hazardous C&DW excluding naturally occurring material defined in category 17 05 04 in the List of Wastes. • Zero waste generation from the development.
Negligible / Not Significant	Neutral or slight	Neutral or slight / Not Significant	• Project achieves 90-99% overall material recovery / recycling (by weight) of non-hazardous C&DW excluding naturally occurring material defined in category 17 05 04 in the List of Wastes. • Project waste arisings are ≤1% of national waste arisings (for the relevant categories of waste).
Minor / Slight	Slight	Slight / Slight	• Project achieves 60-89% overall material recovery / recycling (by weight) of non-hazardous C&DW excluding naturally occurring material defined in category 17 05 04 in the List of Wastes. • Project waste arisings are 1-5% of national waste arisings (for the relevant categories of waste).
Moderate / Moderate	Moderate	Moderate / Moderate	• Project achieves 30-59% overall material recovery / recycling (by weight) of non-hazardous C&DW excluding naturally occurring material defined in category 17 05 04 in the List of Wastes. • Project waste arisings are 6-10% of national waste arisings (for the relevant categories of waste).
Major / Significant	Moderate or Large	Moderate or large / Significant	• Project achieves <30% overall material recovery / recycling (by weight) of non-hazardous C&DW excluding naturally occurring material defined in category 17 05 04 in the List of Wastes.

[1] EPA (2018). *Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous. Pg. 27*

MAGNITUDE OF IMPACT IEMA GUIDANCE / EPA GUIDELINES	EFFECT IEMA GUIDANCE	SIGNIFICANCE OF EFFECT IEMA GUIDANCE / EPA GUIDELINES	CRITERIA
			• Project waste arisings are >10% of national waste arisings (for the relevant categories of waste).

16.2.21 The EPA Guidelines has two additional generalised definitions (profound and very significant) however these are not included since there are no equivalent criteria in the IEMA Guidance.

Methodology for Determining Operational Effects

16.2.22 The potential impacts of the Proposed Development and Overall Project with regards to waste are the effects that waste arisings generated on-site during operations.

16.2.23 The Power Plant Area is required under the Grid Code Secondary Fuel Obligations (CRU) to maintain a secondary fuel supply in accordance with requirements of those Obligations. A fuel treatment plant will be required to remove any contaminants from the secondary fuel that may accumulate during storage.

16.2.24 During the operational phase the internal blading of the gas turbine accumulates deposits from the air over time which requires periodic washing.

16.2.25 In terms of other waste used as part of the operation and running of the Proposed Development and Overall Project, small quantities of oils and chemicals (*i.e.,* lubrication oils, propane, CO_2 cleaning agents and glycol / antifreeze) will also delivered to the Site.

5.1.1 Operational phase waste will also be generated from the Power Plant staff, management and administration staff working on the Site. The Power Plant Area will be operated in line with the IE Licence (to be applied for) and the plant vendors Operation and Maintenance (O&M) manuals. The operator will implement and maintain an Environment Management System (EMS) which will be certified to International Standards Organisation (ISO) 14001.

Methodology for Determining Decommissioning Effects

16.2.26 It is expected that the Power Plant will have a design life of at least 25 years. Effects arising from the process of decommissioning of the Power Plant Area are considered to be of a similar nature and duration to those arising from the construction phase.

16.2.27 The Electricity Grid Connection will be managed by the transmission asset operators (TAO) and transmission service operators (TSO) (ESBNI and EirGrid for electricity) as part of the national grid electricity. Upon decommissioning of the Power Plant Area, the 220 kV substation and 400 kV substation and associated transmission infrastructure will remain in-situ and form part of the national grid infrastructure. Effects of the decommissioning of the Electricity Grid Connection therefore have not been considered as this is not envisaged.

16.2.28 The Gas Connection Corridor will be managed by the transmission asset operators (TAO) and transmission service operators (TSO) (GNI for gas) as part of the national gas networks. At the end of its design life, it is expected that the gas connection pipeline may have residual life remaining, and the operational life may be extended if appropriate and/or the asset refurbished and retained as part of the national transmission network. Effects of the decommissioning of the Gas Connection Corridor therefore have not been considered as this is not envisaged.

Assumption and Limitations

16.2.29 This assessment is based on professional judgement and considers both the adverse and beneficial impacts that the Proposed Development and Overall Project can have upon existing and surrounding receptors in relation to land uses, built services and waste.

16.2.30 The assessment is based on information about the Proposed Development and Overall Project available at the time of drafting the chapter.

16.2.31 Limited information is available with regards to the Gas Corridor Connection. The Gas Connection Corridor may be subject to change during the detailed design and consenting process to be carried out by Gas Networks Ireland (GNI), but the preferred route, at the time of writing, has been considered (please refer to Chapter 3: Need and Alternatives for more detail on site selection process and identification of this preferred route by GNI). An assessment of the Gas Connection Corridor has been carried out in so far as practicable.

16.2.32 It should be noted that the volumes of material and associated waste have been estimated from the main materials likely to be required during the construction, operational and decommissioning phases of the Proposed Development. Furthermore, permitted waste management facilities and capacities of waste facilities may change throughout the course of the Proposed Development especially during the decommissioning phase , however through waste management planning, policy, strategic and legislative drivers it will ensure that sufficient capacity continues to be provided.

16.2.33 Should any asbestos be found during the demolition of existing structures at the Derrygreenagh Works (as part of the site clearance and preparation works required to facilitate the construction of the Power Plant Area), an Asbestos Management Plan will be carried out and any asbestos will be disposed of in suitable manner.

16.2.34 In addition, some site clearance will be required including soil, vegetation and hardstanding. The quantities of waste are anticipated to be small compared to the overall construction waste arisings. It is assumed that this waste would have a high recovery rate and is likely be recovered on-site rather than sent to landfill. All third-party data used to generate the baseline is assumed to accurately reflect the current status of waste arisings and management in the adopted study areas.

16.2.35 There is no collated published information on the potential changes to the national waste arisings and inferred waste management capacity for the period within which the Proposed Development would be constructed. Accordingly, the current baseline is assumed to apply.

16.2.36 Waste arising from the off-site extraction, processing and manufacture of plant and materials used in the construction of the Proposed Development has been scoped out of this assessment. This is based on the assumption that these products and materials are being developed in a manufacturing environment with their own waste management plans, facilities, and supply chain.

16.2.37 Other environmental impacts associated with the management of waste from the Proposed Development and Overall Project e.g., on water resources, air quality, noise or traffic resulting from the generation, handling, on-site temporary storage or off-site.

Consultation

16.2.38 An EIAR scoping letter was issued to a comprehensive list of Statutory and Non-Statutory bodies. Details of consultations are contained in **Chapter 6** of this EIAR and

associated appendices. A number of Statutory and Non-Statutory bodies relevant to this chapter (for land use, built services and waste management) were contacted.

16.2.39 A summary table of all responses from the consultees (for Statutory and Non-Statutory bodies) with regard to the EIA is presented in **Appendix 6C** (The EIAR Consultation Responses) Volume II of the EIAR.

16.2.40 A full copy of all responses is included in **Appendix 6D** (EIAR Consultation Responses), Volume II. The Telecommunications and Aviation Assessment Report, which is included in **Appendix 16A** (Volume II) also provides detail of responses received from telecommunications and aviation stakeholders.

16.3 Policy, Regulatory and Guidance

16.3.1 The Proposed Development and Overall Project lies within the administrative area of Offaly County Council and Westmeath County Council it is therefore subject to the policies and objectives of both Development Plans, (including Variations to the Plan).

16.3.2 The following legislation, policy and guidance is relevant to this chapter and was considered during the assessment presented within it.

Land Use and Built Services

16.3.3 The legislation, policy and guidance applicable to the material assets (land use and built services) assessment includes:

- Directive 2011/92/EU of the European Parliament and the Council on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU (the 'EIA Directive').
- EPA (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018).
- OCC (2021). *Offaly County Development Plan 2021-2027.*
- WCC (2021). *Westmeath County Development Plan 2021-2027*.

Waste Management

16.3.4 The following legislation, policy and guidance is relevant to waste and was considered during the assessment presented within it.

International Legislation and Policy

UN Sustainable Development Goals

16.3.5 The United Nations' 17 Sustainable Development Goals (SDGs) provide a *"shared blueprint for peace and prosperity for people and the planet, now and into the future"*. They were adopted by the United Nations Member States in 2015, including Ireland, as part of the adoption of the 2030 Agenda for Sustainable Development.

16.3.6 These high-level goals frame and inform Irish national agendas and policies to 2030, including (but not limited to) Project Ireland 2040 (National Planning Framework) and the Eastern and Midland Regional Assembly's Regional Spatial and Economic Strategy (RSES).

16.3.7 Goal 12 is of greatest relevance to the Proposed Development and Overall Project: *'Responsible Consumption and Production*', which is geared towards the circular economy and includes targets for sustainable management and use of natural resources, substantially reduce waste generation and to encourage companies to adopt sustainable practices and sustainability reporting.

EU Legislation and Policy

16.3.8 Waste framework legislation establishes the legal structure for the prevention and management of waste. The European Commission (EC) has prepared waste framework legislation to govern this broad approach and the principles for managing waste across all Member States.

European Waste Framework Directive

16.3.9 The *European Waste Framework Directive (Directive 2008/98/EC)* came into force on 12th December 2008. It provides for a general framework of waste management requirements and sets the basic waste management definitions for the EU.

16.3.10 The *EU Directive 2018/85* amends the 2008 Directive and provides a number of updated waste management definitions. The 2018 Directive allows Member States to use economic instruments including taxes and levies as an incentive for the application of the waste hierarchy.

European Green Deal

16.3.11 The *European Green Deal* aims to transform the EU into a modern, resource-efficient and competitive economy, ensuring:

- No net emissions of greenhouse gases by 2050.
- Economic growth decoupled from resource use.
- No person and no place left behind.

16.3.12 The *European Green Deal* aims to improve the well-being and health of citizens and future generations by providing longer lasting products that can be repaired, recycled and re-used.

National Legislation and Policy

European Communities (Waste Directive) Regulations, 2011

16.3.13 The *European Communities (Waste Directive) Regulations S.I. No. 126 of 2011* (as amended) transpose the requirements of the European Waste Framework Directive (Directive 2008/98/EC), as amended by Directive (EU) 2018/851, into Irish legislation. The Regulations require that waste prevention programmes and waste management plans are established and that they apply the waste hierarchy. The waste hierarchy prioritises waste prevention, followed by preparing for re-use, recycling, other recovery (including energy recovery) and finally disposal.

16.3.14 For construction and demolition waste, the Regulations also require measures to be taken to achieve the following target:

- By 2020, the preparing for re-use, recycling and other material recovery, including backfilling operations using waste to substitute other materials, of non-hazardous construction and demolition waste excluding naturally occurring material defined in category 17 05 04 in the List of Waste (LoW) shall be increased to a minimum of 70% by weight.

16.3.15 To support the implementation of the waste hierarchy, the Regulations also:

- Article 27: give provision for an operator to determine that a material is a by-product and not a waste, where certain conditions are met and if approved by the EPA.
- Article 28: give provision for determining end-of-waste status, when a waste may cease to be a waste when it has undergone a recovery operation.

16.3.16 The assessment of waste within this chapter has taken account of the waste hierarchy in the management of waste, including the provisions under Article 27 and Article 28, and of the targets for recovery of non-hazardous construction and demolition waste.

Circular Economy and Miscellaneous Provisions Act 2022

16.3.17 The *Circular Economy and Miscellaneous Provisions Act 2022* provides for the following:

- The making by the Minister for the Environment, Climate and Communications of a circular economy strategy.
- The establishment of the Circular Economy Fund; to make provision in relation to the Environment Fund.
- The establishment by the EPA of a circular economy programme.
- A levy on certain single-use items.
- The prohibition on the supply of certain single-use items.
- To give further effect to Directive (EU) 2015/720 of the European Parliament and of the Council of 29 April 2015 and Directive (EU) 2019/904 of the European Parliament and of the Council of 5 June 2019.
- The making of a national food waste prevention strategy.
- For the use by local authorities of closed-circuit television and mobile recording devices in certain circumstances and for that purpose to amend the Waste Management Act 1996 and the Litter Pollution Act 1997.
- Inclusion of targets in respect of re-used and repaired products and materials in waste management plans.
- The introduction of a requirement for segregated waste bins and incentivised charging for the commercial sector.
- The operation of the national waste collection permit office.
- Waste recovery levy.
- Making by the Minister for the Environment, Climate and Communications of regulations to regulate end-of-waste and by-product notifications to the EPA.
- Giving further effect to Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008.
- To amend the Waste Management Act 1996.
- Prohibition on certain licences relating to coal, lignite and oil shale and for that purpose to amend the Minerals Development Act 1940 and the Minerals Development Act 2017.
- Applications to the EPA for licences, reviews of licences or revised licences in circumstances where an order under section 181(2)(a) of the Planning and Development Act 2000 has been made, or is proposed to be made, by a Minister of the Government for development comprising or for the purposes of the activity to which the application relates and for that purpose to amend the EPA Act 1992; to give further effect to Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 and for that purpose to amend the Electricity Regulation Act 1999; and to provide for related matters.

A Waste Action Plan for a Circular Economy: Ireland's National Waste Policy 2022-2025

16.3.18 *A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2022-2025*[2] sets out Ireland's approach to transitioning to a circular economy.

16.3.19 For construction and demolition waste, the Plan supports the provisions and targets of the European Communities (Waste Directive) Regulations by undertaking to streamline

[2] GOI (2020). *Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2022-2025.*

the decision-making processes for by-product notifications and end-of-waste and updating best practice guidance in line with the waste hierarchy.

16.3.20 This document has been considered within the assessment as it sets out the priority approaches for the construction sector to support delivery of the national construction and demolition waste recovery target.

16.3.21 The Plan calls for the replacement of the existing Regional Waste Management Plans with a single National Waste Management Plan containing targets for reuse, repair, resource consumption and a reduction in contamination. The single plan will aim to build on the progress from 2015, strengthen national capacity and delivery while retaining a regional focus for implementation. Development of this National Waste Management Plan commenced in 2021 and will be informed by the outcomes of this evaluation.

Climate Action Plan 2024

16.3.22 The Climate Action Plan 2024[3] includes a suite of measures to help reduce waste and transition towards a circular economy. These include:

- Develop a new levy on single-use packaging, focusing on disposable cups for cold drinks.
- Develop a roadmap for improved circularity in textiles and improve the separate collection system.
- Go-live of the Deposit and Return Scheme for plastic bottles and aluminium cans.
- Develop a Circular Economy Roadmap for the Construction Sector.
- Undertake high level assessments of Irish geology, for potential for Critical Raw Materials. This report will identify which of the European Critical Raw Materials are potentially hosted in Irish primary deposits.
- Publish a second Whole-of-Government Circular Economy Strategy.
- Deliver a national circular economy platform to provide an authoritative source of information about the circular economy.
- Progress the establishment of a national centre of excellence for circular manufacturing and innovation.
- Roll-out a new levy on disposable coffee cups.
- Progress the development and rollout of a communications campaign for the circular economy.
- Undertake high level assessments at known historic mine sites to evaluate potential for future detailed analysis and evaluation, including for import substitution. The report will be used to direct Ireland's response to the Critical Raw Materials Act (CRMA) regarding increasing circularity within the mining sector, reducing Europe's import reliance for critical and strategic raw materials and building resilience within the decarbonisation of the energy sector value chain, specifically raw material demand for renewable technologies. It will also guide the remediation strategies for the contaminated Silvermines and Avoca mine sites.

[3] DECC (2023). *Climate Action Plan 2024*.

Regional and Local Planning Policy

Eastern-Midlands Region Waste Management Plan 2015-2021

16.3.23 For the purposes of waste management planning, Ireland is divided into three regions: Southern, Eastern-Midlands and Connacht-Ulster. Waste Management Plans for the three regions were published in May 2015. The Proposed Development and Overall Project is located within the Eastern-Midlands region and the *Eastern-Midlands Region Waste Management Plan 2015-2021*[4] provides the framework for the prevention and management of wastes in a safe and sustainable manner.

16.3.24 The Waste Management Plans must be evaluated every six years and revised as appropriate. The three Regional Waste Management Planning Lead Authorities are now proceeding with the preparation of a replacement combined National Waste Management Plan for a Circular Economy.

16.3.25 Some of the key measures of the Waste Management Plan are:

- Commit to a minimum expenditure on waste prevention activities each year.
- Encourage more reuse and repair activities in the region, particularly at civic amenity facilities.
- Ensure sufficient staff and financial resources are in place to implement prevention, resource efficiency and enforcement programmes.
- Deliver communication, awareness and on the ground activities which lead to a lasting change in the behaviours of citizens and businesses towards their wastes.
- Increase the level of source-segregated kerbside collections in the region, with a strong focus on ensuring that a three-bin system becomes commonplace at household and commercial levels.
- Implement and regulate the new national pay-by-weight charging system which is due to come into force.
- Enforce the regulations related to household and commercial waste to tackle the problem of unmanaged waste and other issues.
- Plan and develop higher quality waste treatment infrastructure including new reprocessing, biological treatment, thermal recovery and pre-treatment facilities.
- Grow the biological treatment sector, in particular composting and anaerobic digestion, by supporting the development of new facilities.
- Support the development of thermal recovery in the region which meets the needs of the region and the State in reducing the export of residual wastes for treatment abroad.
- Ensure existing and future waste facilities do not impact on environmentally sensitive sites through proper assessments and siting.
- Grow the waste management sector into a prosperous and sustainable industry which creates and maintains healthy employment.

Offaly County Development Plan 2021-2027

16.3.26 The *Offaly County Development Plan (CDP) 2021-2027* is a land use plan and overall strategy for the proper planning and sustainable development the functional area of County Offaly over a 6-year period.

[4] EMR (2015). *Eastern-Midlands Region Waste Management Plan 2015-2021*.

16.3.27 The following waste management objectives are included in the Offaly CDP:

- **ENVO-05**: It is an objective of the Council to implement the Eastern-Midlands Regional Waste Management Plan 2015-2021; the Council's Litter Management Plan and Waste Bye-Laws.
- **ENVO-06:** It is an objective of the Council to use statutory powers to prohibit the illegal deposit and disposal and collection of waste materials, refuse and litter, and to authorise and regulate, waste disposal within the county in an environmentally sustainable manner.
- **ENVO-07**: It is an objective of the Council to implement the legislative provisions in relation to historic landfill sites in the county and to undertake risk assessments where required and any subsequent remedial measures where necessary.
- **ENVO-08:** It is an objective of the Council to promote the inclusion of adequate and easily accessible storage space that supports the separate collection of dry recyclables and food, as appropriate, within developments.
- **ENVP-10**: It is Council policy to promote circular economy principles, prioritising prevention, reuse, recycling and recovery, and to sustainably manage residual waste. New developments will be expected to take account of the provisions of the Waste Management Plan for the Region and observe those elements of it that relate to waste prevention and minimisation, waste recycling facilities, and the capacity for source segregation.
- **CAEP-29**: It is Council policy to support the circular economy and within that the bio-economy including in particular through greater efficiency in land management, greater use of renewable resources and by reducing the rate of land use change from urban sprawl and new development, resulting in optimal socioeconomic and environmental impacts such as resource efficiency and reduction of greenhouse gas emissions.

Construction and Demolition (C&D) Waste

16.3.28 It is noted in Chapter 11 of the Offaly CDP that it is: "*The Council will have regard to and require compliance with the* '*Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects*'[5] in the management of waste from construction and demolition projects. A Construction and Demolition Waste Management Plan shall be required as part of a planning application in excess of the thresholds set out in Chapter 13 Development Management Standards".

Construction and Environmental Management Plan (CEMP)

16.3.29 The Offaly CDP outlines the following in relation to Construction Environment Management Plans (CEMPs):

16.3.30 *"A CEMP shall be prepared for larger scale projects and this requirement shall be assessed on a case-by-case basis as part of the development management process. Such plans shall incorporate relevant mitigation measures contained in any accompanying Environmental Impact Assessment Report or Appropriate Assessment and in this Development Plan. CEMPs shall typically provide details of intended construction practice for the proposed development, including where applicabl*e:

[5] EPA (2021). *Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for C&D Projects.*

- *Location and details of site compounds, refuse storage areas, construction site offices and staff facilities, site security fencing and hoardings, on-site staff car parking:*
- *… Disposal of construction / demolition waste and details of how it is proposed to manage excavated soil, including compliance with 2006 Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects, Department of the Environment;*
- *… If peat is encountered - a peat storage, handling and reinstatement management plan…*[6].

Westmeath County Development Plan 2021-2027

16.3.31 The *Westmeath CDP 2021-2027* sets out the Council's proposed policies and objectives for the development of the County over the Plan period.

16.3.32 The following objectives are included in the *Westmeath* CDP:

- **CPO 10.122**: Support the implementation of the Eastern Midlands Region Waste Management Plan 2015-2021 and any updates made thereto.
- **CPO 10.123**: Encourage and support waste prevention, minimisation, reuse, recycling and recovery as methods of managing waste.
- **CPO 10.124**: Facilitate the transition from a waste management economy to a green circular economy to increase the value recovery and recirculation of resources.

Guidance Policy, Standards and Guidance

16.3.33 In the absence of specific guidance or requirements for waste environmental impact assessment (EIA) in Ireland, professional judgement is used to determine the magnitude and significance of effect taking into account the following EIA guidance.

Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impacts Assessment Reports (2022)

16.3.34 The EPA Guidelines have been drafted with the primary objective of improving the quality of EIARs with a view to facilitating compliance (with the EIA Directive[7]). By doing so they contribute to a high level of protection for the environment through better informed decision-making processes. They are written with a focus on the obligations of developers (Applicant) who are preparing EIARs.

IEMA Guide to Materials and Waste in Environmental Impact Assessment. Guidance for a Proportionate Approach (2020)

16.3.35 The IEMA guide to *Materials and Waste in Environmental Impact Assessment. Guidance for a Proportionate Approach*[8] (IEMA guidance) provides guidance on the key terms, concepts and considerations for assessing the environmental impacts and effects of materials and waste, as part of the EIA process. The guide is focused on the UK regulatory framework, although the principles are broadly applicable to EU jurisdictions, and have been used to inform the assessment methodology. However, it is not possible to use part of methodology which compares project waste arisings against national landfill capacity since remaining landfill capacity data for Ireland is not available. Therefore, waste arisings are compared against national waste arisings. The approach to applying sensitivity has not been applied since waste arisings are not compared to landfill capacity. Magnitude of impact has been aligned with significance of effects

[6] OCC (2021). *Offaly CDP 2021-2027. Chapter 11. Pg. 354*
[7] European Parliament and the Council of the European Union (2014). *Directive 2014/52/EU.*
[8] IEMA (2020). *IEMA guide to: Materials and Waste in Environmental Impact Assessment. Guidance for a Proportionate Approach.*

thresholds in the IEMA Guidance as show in **Table 16.1**. It is not possible to fully align these significance effects thresholds with the EPA generalised definitions since the EPA Guidelines have seven generalised definitions and the IEMA guidance has five thresholds.

16.3.36 The following guidelines have informed the preparation of the CEMP, refer to **Appendix 5A,** refer to Volume II.

EPA Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects (2021)

16.3.37 The EPA *Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects*[9] provide a practical approach which is informed by best practice in the prevention and management of construction and demolition wastes and resources from design through to construction and deconstruction. The guidelines provide clients, developers, designers, practitioners, contractors, sub-contractors and competent authorities with a common approach to preparing resource and waste management plans.

16.3.38 The guidelines address the best practice approach both prior to construction, including the stages of design, planning and procurement in advance of works on-site, and during construction, relating to the effective management of resources and wastes during construction or demolition operations.

[9] EPA (2021). *Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for C&D Projects.*

16.4 Baseline Environment Conditions and Constraints

16.4.1 This section provides a description of the relevant aspects of the baseline environment in relation to material assets.

Power Plant Area

Land Use

16.4.2 The Power Plant Area is located within the administrative area of Offaly County Council and will be located within and immediately adjacent to the footprint of the consented CCGT and OCGT Power Station Site (Planning reference 19.PA0011). The Power Plant Area is located in a predominantly rural area, in the townland of Derrygreenagh, Co. Offaly, close to the border with Co. Westmeath.

16.4.3 The Power Plant Area is located within lands which is owned by the Applicant. These lands are peat bogs and have been historically harvested, however, peat extraction activities ceased in 2021. Current activities onsite post-peat extraction includes, site management and environmental monitoring, regulated under the Integrated Pollution Control (IPC) Licence, Reg No. P0501-01.

16.4.4 The proposed Power Plant Area will be located within Drumman Bog, on a brownfield site, with hardstanding surfaces, known as Derrygreenagh Works.

16.4.5 There are a number of buildings associated with the Derrygreenagh Works, including workshops, stores, and offices, paved and concreted areas, outhouses, car-parking facilities and machinery yards. The site also contains mature trees, hedges and grassland. A narrow-gauge railway traverses the site, which is part of a network of railways connecting the site to the surrounding bog complex.

16.4.6 This area was formerly used for servicing and repairing peat harvesting and transport equipment. Currently, the area services equipment required for post-peat extraction activities required for site management and environmental monitoring.

16.4.7 Derrygreenagh Works is considered a light industrial land use.

Electricity Supply

16.4.8 There is an existing rural electricity supply to the existing Derrygreenagh Works site.

16.4.9 In terms of existing electrical infrastructure in the area, there is a 110 kV substation at Derryiron, adjacent to the Rhode Peaking Power Plant, approximately 5km south of the Power Plant Area. There is an existing 220 kV line running 3.5km to the north (Maynooth-Shannonbridge branch), a 110 kV line (Derryiron – Thurnsberry branch) to the south and a 400 kV line (Oldstreet-Woodland branch) running c. 7km to the south of the Power Plant Area.

16.4.10 While there are some overhead electricity lines within the Study Area it is also possible that there might be some underground electricity cables discovered during the proposed works, particularly near any existing buildings and infrastructure. Damaging an underground electricity cable may have the potential to cause serious harm or death. An existing overhead local electricity supply line may pose a hazard to tall vehicles, excavators, etc. travelling underneath. All proposed works being carried out on overhead or underground electricity cables will be done in consultation with the relevant provider.

Gas Supply

16.4.11 The Power Plant Area is located in proximity to the Dublin-Galway Gas high pressure pipeline (BGE/77), which lies just to the north of Rochfortbridge Village, Co. Westmeath.

16.4.12 The existing high pressure gas connection pipe, Gas Pipeline to the West (BGE/77) runs in an east-west direction c.9.6km north of the Power Plant Area. There is no existing gas supply running through the Power Plant Area and no requirement to consider in the baseline.

Wastewater Services (foul, process and surface water)

16.4.13 Derrygreenagh bog group is served by installation of surface water drainage, incorporating pump stations, silt ponds and drain channels as well as rail network (including rail lines, underpasses / bridges and ancillary infrastructure) and machine passes alongside. Drainage is by gravity flow, however in Ballybeg Bog, there is a pumped system used to drain the bog. The required pump station was located at low points in larger drains and are used to direct surface water to the outfall locations via silt ponds in accordance with the IPC Licence requirements.

16.4.14 The existing Derrygreenagh Works currently discharges treated and surface water into a drainage ditch to the north of the Site, which ultimately flows into the Mongagh River.

16.4.15 Foul water is discharged and treated through 2 No. septic tank systems which discharge through soakaways.

Water Supply

16.4.16 There is no mains water connection to the Power Plant Area.

16.4.17 There is one well located in the Power Plant Area - 'PW1' and one well located 80m outside of the Power Plant Area - the 'Hostel Well'. These wells are not recorded in the GSI's National Well Database (GSI, 2023). There are no details on the well depth, construction, drilled geology or pump testing results available to this study for the Hostel Well however, this well supplies all the current water requirements for the existing BnM site.

16.4.18 Severing a water pipe has the potential to interrupt local water supply within the existing facility. This might result in a brief period where kitchen / toilet facilities are not usable, however this would not be expected to last for more than a couple of hours in the unlikely event that it did happen. If a water pipe was damaged, the water supply would be turned off where it enters the Site, and it will be repaired as a priority.

Telecommunications

16.4.19 There are a number of telecommunications masts in proximity to the Power Plant Area. Refer to the Telecommunications and Aviation Assessment Report (**Appendix 16A**, Volume II).

16.4.20 The closest is a mobile phone mast south of the redline boundary for the Power Plant Area site. This is known as the Cellnex Ireland mast, located c. 150m to the south of the Power Plant Area and is c. 36m in height. This mast is owned and operated by Cellnex Ireland but is on land leased from Bord na Móna. Currently this mast provides space for Three Ireland as well as Imagine Broadband.

16.4.21 There is also an existing telecommunications mast structure attached to one of the buildings on site, but this has been decommissioned for some time and is not in use by any provider.

Waste and Resource Management

16.4.22 The current state of the environment comprises baseline information on waste arisings and waste management in Ireland. The baseline environment information has been

sourced from the most recent data collated and published by the EPA[10] as shown in **Table 16.2** to **Table 16.4**.

Construction and Demolition Waste Arisings

16.4.23 **Table 16.2** summarises the types and quantities of C&D waste collected by authorised waste collectors in Ireland in 2021, as reported by the EPA[20]. It shows that approximately 9,043,49 tonnes of C&D waste were collected, with the majority comprising soil, stones and dredging spoil (85.1%). The quantity of C&D waste generated and collected in 2021 increased to 9 million tonnes from 8.2 million tonnes in 2020, an increase of 10%.

Table 16.2: C&D Waste Collected in Ireland in 2021

C&D WASTE TYPE	QUANTITY COLLECTED (TONNES)	PROPORTION OF TOTAL (%)
Bituminous mixtures	87,343	1.0%
Concrete, brick, tile and gypsum	608,235	6.7%
Metal	257,558	2.8%
Mixed C&D waste	362,380	4.0%
Segregated wood, glass and plastic	31,946	0.4%
Soils, stones and dredging spoil	6,946,632	85.1%
Total	**9,043,749**	**100%**

***** *Please note that no gypsum was backfilled or landfilled*

Source: EPA (2023). Construction & Demolition Waste Statistics for Ireland

C&D Waste Management

16.4.24 **Table 16.3** and **Table 16.4** set out the treatment methods used for managing C&D waste in Ireland in 2021, as reported by the EPA. Waste treatment by backfilling was the most utilised treatment method, managing 85% of C&D waste, and mainly comprising of soils, stones and dredging spoil waste type.

Table 16.3: C&D Waste Treatment (tonnes) in Ireland in 2021

C&D WASTE TYPE	Treatment Type				
	Recycling (tonnes)	Energy Recovery (tonnes)	Backfilling (tonnes)	Disposal (tonnes)	Total (tonnes)
Bituminous mixtures	41,150	1,505	33,449	8,527	**84,631**
Concrete, brick, tile and gypsum *	262,685	1,244	299,725	16,568	**580,223**
Metal waste	272,734	-	-	-	**272,734**
Mixed C&D waste	398	73	88,747	34,356	**123,574**
Segregated wood, glass and plastic	50,348	13,918	743	407	**65,416**
Soils, stones and dredging spoil	-	34	7,251,952	450,267	**7,702,254**
Waste treatment residues	51,892	9,323	39,122	114,580	**214,917**
Total	**679,208**	**26,098**	**7,713,738**	**624,705**	**9,043,749**

***** *Please note that no gypsum was backfilled or landfilled*

Source: EPA (2023). Construction & Demolition Waste Statistics for Ireland

[10] EPA (2023). *Construction & Demolition Waste Statistics for Ireland.*

Table 16.4: C&D Waste Treatment (%) in Ireland in 2021

C&D WASTE TYPE	Treatment Type				
	Recycling (%)	Energy Recovery (%)	Backfilling (%)	Disposal (%)	Total (%)
Bituminous mixtures	49	2	40	10	**100**
Concrete, brick, tile and gypsum *	45	0	52	3	**100**
Metal waste	100	0	0	0	**100**
Mixed C&D waste	0	0	72	28	**100**
Segregated wood, glass and plastic	77	21	1	1	**100**
Soils, stones and dredging spoil	0	0	94	6	**100**
Waste treatment residues	24	4	18	53	**100**

***** *Please note that no gypsum was backfilled or landfilled*

Source: EPA (2023). Construction & Demolition Waste Statistics for Ireland

16.4.25 In 2021, approximately 96% of C&D waste underwent final treatment in Ireland with approximately 4% exported for final treatment. Exports mainly comprised soil and stone material and waste metals[20].

16.4.26 It should be noted that the reported quantities of C&D waste collected (**Table 16.3**) and treated (**Table 16.4**) in Ireland differ. The EPA identifies that the differences are due to the data being collated from different datasets. Waste collectors record waste as it enters the waste treatment network, whereas the final treatment data indicates what happens to waste at the end of its journey through the waste treatment network. This can lead to differences in waste classifications and quantities.

16.4.27 The EPA's '*Progress to EU Targets*'[11] reports Ireland's performance against targets set out in European Directives. In terms of the Waste Framework Directive (2008/98/EC) target of *'Preparing for reuse, recycling and other material recovery (incl. beneficial backfilling operations using waste as a substitute) of 70% by weight of non-hazardous construction and demolition waste (excluding natural soils & stone)'*, a performance of 78% was reported for 2020, exceeding the 70% target.

Waste Management Facilities

16.4.28 The waste management facilities to be utilised by the Proposed Development and Overall Project are not yet known and suitability will be determined by the appointed contractor. Waste disposal and recovery activities in Ireland require authorisation in accordance with the Waste Management Act 1996 as amended. A waste recovery or disposal activity at a facility is either:

- an exempted activity (no authorisation required);
- requires a Waste Certificate of Registration / Registration Certificate;
- requires a Waste Facility Permit; or
- requires a Waste (or IE) licence.

16.4.29 The EPA is the competent authority for granting and enforcing Industrial Emissions (IE) & Industrial Pollution Control (IPC) licences for specified industrial and agriculture activities including waste. **Table 16.5** sets out IE and IPC licensed waste facilities in Co. Offaly and Co. Westmeath collated from the licence register[12].

[11] EPA (2022). *Progress to EU Waste Targets. 27 October 2022.*
[12] EPA (2023). *Search for a Licence / Permit.*

16.4.30 The EPA grants and enforces waste and IE licences for other specified waste activities listed in the 3rd and 4th Schedule to the Waste Management Act 1996 as amended and per the First Schedule of the EPA Act as amended including:

- landfills;
- transfer stations;
- hazardous waste disposal;
- ship recycling; and
- other significant waste disposal and recovery activities.

16.4.31 Permits are granted for waste activities regulated by both local authorities and private operators per Waste Management (Facility Permit and Registration) Regulations 2007 as amended. **Table 16.5** sets out these licensed waste facilities in Co. Offaly and Co. Westmeath, collated from the waste licence register[13].

16.4.32 **Table 16.6** lists out the Local Authority waste facility register for both Offaly and Westmeath.

16.4.33 Licenced landfills are not included in **Table 16.5** and **Table 16.6** since many sites are licensed but are closed or no longer accept waste. It is also anticipated that the majority of waste from the Proposed Development and Overall Project will be recovered rather than being sent to landfill.

[13] EPA (2023). *Search for a Licence / Permit.*

Table 16.5: IE and Waste Licensed Waste Facilities in Co. Offaly and Co. Westmeath

REG NO.	NAME	LOCATION	SITE TYPE	HOUSEHOLD/ MUNICIPAL	COMMERCIAL	INDUSTRIAL	C&D	HAZARDOUS	STREET CLEANSING	HEALTHCARE	ASH	LIQUID	SLUDGE	WEEE **	BIO / COMPOST *
W0049-02	Bord na Móna Energy Limited	Cloncreen Bog, Clonbulloge, Co. Offaly	Ash Repository			70,000									
W00104-04	Bord na Móna Recycling Limited	Cappincur Industrial Est., Cappincur, Tullamore, Co. Offaly	Recovery / Recycling	40,000	20,000		20,000								
W00113-04	KMK Metals Recycling Limited	Cappincur Industrial Est., Daingean Rd, Tullamore, Co. Offaly	Recovery / Recycling											35,000	
W0282-01	Glanpower Limited	Derryclure Energy Centre, Derryclure, Tullamore, Co Offaly	Energy from Waste	65,000											
P1076-01	KMK Metals Recycling Limited	Moate Rd, Kilbeggan, Co. Westmeath	Recovery / Recycling											50,000	
P1093-01	Soletc (Ireland) Limited	IDA Business Pk, Clonmore, Mullingar, Co. Westmeath	Hazardous Waste Facility					20,000							
WO115-01	Soltec (Ireland) Limited	Zone A, Mullingar Bus. Pk, Mullingar, Co. Westmeath	Hazardous Waste Facility					5,000							
W0197-02	Mulleady's Limited	Units 16-17 Mullingar Bus. Pk, Mullingar, Co. Westmeath	Recovery / Recycling	10,000	30,000		8,000	2,000							
W0029-04	Offaly County Council	Derryclure Landfill, Derryclure and Killeigh, Tullamore, Co. Offaly	Landfill	45,500	39,500	11,000	2,000	18					2,000		
W0049-01	Bord na Móna Energy Limited	Clonbulloge Ash Repository, Cloncreen Bog, Clonbulloge, Co. Offaly	Ash Repository								50,000				
W0104-02	Bord Na Móna Recycling Limited	Bord Na Móna Recycling Limited, Cappincur Industrial Estate, Cappincur, Tullamore, Co. Offaly	Waste Transfer Station	14,000	26,000		9,800	200							
W0113-02	KMK Metals Recycling Limited	KMK Metals Recycling Limited, Cappincur Industrial Est, Daingean Rd, Tullamore, Co. Offaly	Metallic Waste Recovery										10,000		
W0028-03	Westmeath County Council	Ballydonagh Landfill, Ballydonagh Dublin Rd, Athlone, Co. Westmeath	Landfill	53,500		4,500	2,000								
W0071-02	Westmeath County Council	Ballydonagh Landfill, Ballydonagh, Dublin Rd, Athlone, Co. Westmeath	Landfill	2,500											

REG NO.	NAME	LOCATION	SITE TYPE	HOUSEHOLD/ MUNICIPAL	COMMERCIAL	INDUSTRIAL	C&D	HAZARDOUS	STREET CLEANSING	HEALTHCARE	ASH	LIQUID	SLUDGE	WEEE **	BIO / COMPOST *
W0197-01	Mulleady's Limited	Mulleady's Ltd (Mullingar) Units 16-17 Mullingar Business Pk, Mullingar, Westmeath		10,000	30,000		10,000								

** Biodegradable / Compostable*
*** Metals / Waste Electrical and Electronic Equipment (WEEE)*

Table 16.6: Local Authority Waste Facility Register in Co. Offaly and Co. Westmeath

AUTHORISATION REFERENCE	NAME	TRADING AS	ADDRESS
WFP-OY-14-0197-01	Pat Mangan		Ballycon Mount Lucas Daingean Co. Offaly
COR-OY-11-0004-02	Killeshal Precast Concrete Ltd		Killeshal Daingean Co Offaly R35 YK85
WFP-OY-16-0199-01	Anthony Cocoman		Shean Edenderry Co. Offaly
WFP-OY-10-0184-02	Gregory Kinahan Sales Ltd		Fearboy Moate Co. Offaly N37 PY66
WFP-OY-17-0200-01	Hinch Plant Hire Ltd		Ballydownan Geashill Co Offaly
WFP-OY-18-0202-01	John Mallen		Ballycon Mount Lucas Co Offaly
WFP-OY-17-0201-01	Healion Contractors Ltd		Glaskill Mucklagh Co Offaly
WFP-OY-10-0183-03	Guessford Limited	Oxigen Environmental	Barnan Daingean Co Offaly R35 EE64
WFP-11-OY-0191-02	Orla Canton & Damien Barry		Cloncreen Clonbullogue Co Offaly R45 CF10
WFP-OY-19-0203-01	Waste Matters Limited		Ballycumber Road Clara Co Offaly R35 XR57
WFP-OY-19-0204-01	Kilmurray Pre-Cast Concrete Ltd		Derryarkin Rhode Co. Offaly
COR-OY-20-0008-01	Ellsport Ltd		Derrygolan Tullamore Co. Offaly
WFP-10-OY-0182-03	David Bracken Junior	Brackens	The Pound Ballycumber Co Offaly R35 VN81
WFP-OY-10-0180-03	Condron Car Dismantlers Ltd		Cappancur Industrial Estate Cappancur Tullamore Co. Offaly R35 PX77
WFP-13-OY-0193-02	Condron Tyres Ltd		Killeigh Tullamore Co. Offaly
WFP-T-16-0001-02	Midland Scrap Metal Company Ltd.	MSM Recycling	Annagh Birr Co Offaly R42 RT68
WFP-OY-20-0205-01	Dermot Nally Stone Ltd.		Carowkeel Clonfinlough Co. Offaly
WFP-OY-15-0198-02	Condron Concrete Limited		Ardan Tullamore Co. Offaly

AUTHORISATION REFERENCE	NAME	TRADING AS	ADDRESS
WFP-WM-2015-0002-01	JD Car Dismantlers Ltd	Joe Devery Car Dismantlers	Ballykeeran Athlone Co Westmeath N37 F402
WFP-WM-2016-0004-01	Barna Waste Ltd (Athlone Facility)	Barna Waste	Slevins's Yard, Washhouse Road Cartontroy Athlone Co Westmeath N37 YH39
WFP-WH-2017-0100-00	Athcast Ltd		14/15 Mullingar Business Park Mullingar Co Westmeath
WFP-WH-2018-0102-00	P Cross Earthworx Ltd		Annaskinnan Quarry Killucan Co Westmeath
WFP-WH-2018-0105-00	KPA (Ballinalack Limited)		Ballinalack Mullingar Co Westmeath N91 ATY0
WFP-WH-2019-0106-00	Liam Ward	t/a Pollard Plant Services	Heathstown Coralstown Mullingar Co Westmeath
COR-WH-2018-0104-00	PJ McLoughlin & Sons Ltd		Lynn Road Mullingar Co Westmeath
WFP-WH-2018-0103-00	Derryarkin Motocross Ltd.	DK Motocross Ltd.	Rochfortbridge Co Westmeath
WFP-WH-2019-0107-00	Auto Euro Parts Ltd.		Block A7, Blyry Business & Commercial Pk, Athlone Co Westmeath N37 WV88
WFP-WM-2014-02-00	Ganly Motors Ltd	Mullingar Car Dismantlers	Railway Yard Grove Street Mullingar Co. Westmeath N91 DKX5
WFP-WH-2019-0108-00	Matthew McMahon	Fortway Construction Ltd	Clonaglin Kilbeggan Co Westmeath
WFP-WH-2019-0110-00	Flamers Limited		Sonna Slanemore Mullingar Co Westmeath N91 PYC8
COR-WH-2019-0109-01	Multyfarnham GAA		Ferbrammagh Multyfarnham Mullingar Co Westmeath
COR-WH-2020-0112-00	Shandonagh GAA		Kilpatrick Ballinea, Mullingar Co Westmeath N91 XY09
WSSR-WM-2020-001	Enva Organics Ltd.		Bryan Fallon (landowner) Farthingstown Rochfortbridge Co. Westmeath
COR-WH-2021-0006-00	Martin McKeon	Martin McKeon	Heathstown Coralstown Co Westmeath
COR-WH-2021-0002-00	Michael Newman		Cornaher Kilbeggan Co. Westmeath
WFP-WH-2021-004-00	The Hammond Lane Metal Company Ltd		Garrycastle Athlone Co. Westmeath N37 VR72
WFP-WH-2022-0001-00	Hamill Rentals Ltd.		Marlinstown Dublin Road Mullingar Co Westmeath
WFP-WH-2021-0007-00	Michael Dolan	Johnstown Recycling	Johnstown Slanemore Mullingar Co Westmeath N91 X0NW
COR-WH-2021-0010-00	Aghard Properties Limited	Aghard Properties Limited	Ashe Road Mullingar Co. Westmeath
WFP-WM-2021-0013-00	Morgan Aggregates Ltd		Rathgarrett Tyrrellspass Co. Westmeath
WFP-WH-2021-0011-02	Gannon Eco Ltd		Split Hill Quarry Hazelwood Kilbeggan Co Westmeath N91 TNK3
COR-WH-2022-0004-00	Maryland GAA Club		Fr. Brady Memorial Park Carrickaneha Drumraney Athlone, Co. Westmeath, N37 WP26
WFP-WH-2021-0005-02	Chris Lynch Waste Management Ltd.		31, Zone C, Mullingar Business Park Mullingar Co. Westmeath N91 EP97
WFP-WH-2022-0002-01	G&J O'Neill Enterprises Ltd		Clonmellon Industrial Estate Clonmellon Co. Westmeath C15 HN81

Source: Available at: https://facilityregister.nwcpo.ie/

Article 27: By-Product Notifications

16.4.34 Article 27 of the European Communities (Waste Directive) Regulations, 2011[14] allows an operator to decide, under certain circumstances, that a material is a by-product and not a waste. This provision is often invoked in connection with construction and demolition material, and particularly soil and stone. It allows materials to be used elsewhere in construction projects as a by-product and not discarded as a waste. Decisions made by economic operators under Article 27 must be notified to the EPA. The EPA may determine to agree with the economic operator's decision, as notified; alternatively, after consultation with the notifier and the relevant local authority, the EPA may determine that the notified material is waste[21].

16.4.35 **Table 16.7** summarises the soil and stone by-product notifications submitted to the EPA in 2021. In 2021, the EPA received by-product notifications for 12,526,137 tonnes of soil and stone material. The EPA determined that 459,836 tonnes of the soil and stone notified were by-product, as notified, and that 600 tonnes were waste[21].

16.4.36 It is important to note that by-product notifications do not necessarily mean that any or all of the material was generated or indeed moved. Notifiers of by-product may not have proceeded with the activities related to the by-product notifications. However, if they did proceed, the materials would not have entered the waste management network or be included in the 2021 C&D waste statistics.

Table 16.7: Soil and Stone By-Product Notifications Submitted, 2021

SOIL AND STONE BY-PRODUCT NOTIFICATIONS	QUANTITY (TONNES)
Notifications withdrawn	152,400
By-product as notified	459,836
Determined as waste	600
No determination made	11,913,301
Total	**12,526,137**

Source: EPA (2023). Construction & Demolition Waste Statistics for Ireland

Hazardous Waste Arisings and Management

16.4.37 The EPA reported that 466,941 tonnes of hazardous waste were generated in Ireland in 2021[15] (a decrease of 16% from 2020) and managed via the management routes shown in **Table 16.8**.

16.4.38 The construction and demolition sector produced 29% of Ireland's hazardous waste in 2021. This mainly comprised dredging spoil and contaminated soil, but also included smaller quantities of asbestos, asphalt, and contaminated wood, concrete, bricks, metals and tiles.

Table 16.8: Hazardous Waste Generation and Management in 2021

WASTE TYPE AND MANAGEMENT ROUTE	QUANTITY (TONNES)
Hazardous waste - treated at Irish hazardous waste treatment facilities	95,130.42
Hazardous waste - treated at EPA licensed facilities	115,950.72
Contaminated soil - treated in Ireland	32,623.87
Hazardous waste - exported for treatment	222,908.86
Contaminated soil - exported for treatment	327.3

[14] GOI (2011).
[15] EPA (2023). *Hazardous Waste Statistics for Ireland. 31 January 2023.*

WASTE TYPE AND MANAGEMENT ROUTE	QUANTITY (TONNES)
Total	**466,941.17**

Source: EPA (2023). Hazardous Waste Statistics for Ireland. 31 January 2023

Electricity Grid Connection

Land Use

16.4.39 The majority of the Electricity Grid Connection is located within lands owned by the Applicant. The proposed Electricity Grid Connection will be located within a brownfield site in the Derryarkin Bog and Ballybeg Bog, with limited mature trees, grassland and cutover bogs with varying degrees of vegetation. These bogs are owned by the Applicant.

16.4.40 The route of the proposed Electricity Grid Connection route starts to the west of the Power Plant Area, on the western side of the R400 road.

16.4.41 The 220 kV Substation will be located on a brownfield site on the existing narrow gauge railway route, on a mixture of made ground and bare peat. There is an existing refuelling station to the north-east (west of the R400 road, outside the red line planning boundary).

16.4.42 The overhead Electricity Grid Connection route will be located within Bord na Móna Derrygreenagh Bog Group on Derryarkin Bog and Ballybeg Bog. These bogs are served by installation of surface water drainage, silt ponds and drain channels as well as rail network (including rail lines, underpasses / bridges and ancillary infrastructure) and machine passes alongside. Drainage is by gravity flow, however in Ballybeg Bog, there is a pumped system used to drain the bog.

16.4.43 The 220 kV overhead line will transition to a 220 kV underground cable via a double circuit Line-Cable Interface Compound. The underground cable will be routed within an existing railway line and machine pass corridor on Bord na Móna lands for c. 2.3km before routing through c. 100m of third-party agricultural land before linking into the 400 kV substation site area. There are a number of houses adjacent to the cable route where it dissects the L1010 road (one house to east within 500m) and in proximity at Taylors Cross (14 no. houses west within 500m) in the townland of Togher.

16.4.44 The proposed 400 kV Substation will be located on agricultural land, adjacent to the west of the Ballybeg Remnant Bog, south of the L1010 road. The site is predominantly improved grassland with perimeter mature trees and hedgerow. The Grand Canal is c. 450m south of the 400kV Substation site.

16.4.45 Access to the 400 kV Substation site is currently via agricultural land units to the west however the proposed construction and operational access route will be from the historic railway line to the east.

16.4.46 The characteristics of the surroundings of the Proposed Development and Overall Project vary, but is typically rural in nature, principally historic peat harvesting and agriculture and residential developments with either scattered houses and farming buildings, or dwellings clustered along busier roads.

Electricity Supply

16.4.47 In terms of existing electrical infrastructure in the area, there is a 110 kV substation at Derryiron, adjacent to the Rhode Peaking Power Plant, approximately 1km west of the Electricity Grid Connection.

16.4.48 There is an existing 110 kV line (Derryiron – Thurnsberry branch) running through the Electricity Grid Connection route with the intersection with the L1010 road and a 400 kV

line (Oldstreet-Woodland branch) running to the immediate south of the Electricity Grid Connection.

Gas Supply

16.4.49 The existing high pressure gas connection pipe, Gas Pipeline to the West (BGE/77) runs in an east-west direction c.9.6m north of the northern extent of the Electricity Grid Connection. There is no gas supply running through the Electricity Grid Connection route and no requirement to consider in the baseline.

Wastewater Services (foul and surface water)

16.4.50 Derrygreenagh bog group is served by installation of surface water drainage, incorporating pump stations, silt ponds and drain channels as well as rail network (including rail lines, underpasses / bridges and ancillary infrastructure) and machine passes alongside. Drainage is by gravity flow, however in Ballybeg Bog, there is a pumped system used to drain the bog. The required pump station was located at low points in larger drains and are used to direct surface water to the outfall locations via silt ponds in accordance with the IPC Licence requirements.

16.4.51 The existing Derrygreenagh Works currently discharges treated and surface water into a drainage ditch to the north of the site, which ultimately flows into the Mongagh River.

16.4.52 Foul water is discharged and treated through 2 No. septic tank systems which discharge through soakaways.

Water Supply

16.4.53 There is no existing Irish Water mains water connection within the Electricity Grid Connection route.

16.4.54 There is a well; 'Abstraction Well' (ID 2323SEW023), which is mapped at approximately 200m to the west of the OHL.

16.4.55 A borehole owned by Edenderry RDC and part of a Public Water Supply (PWS) (ID 2323SEW013) is located in close proximity to the west of the 400kV substation Site. There is a dug well (ID 2323SEW014) located in close proximity to the west of the 400kV substation Site.

16.4.56 There is a spring associated with the Toberdaly PWS (ID 2323SEK001), which is mapped at approximately 900m to the east of the 400kV substation Site and the UGC.

Telecommunications

16.4.57 There are a number of telecommunications masts in proximity to the Electricity Grid Connection. The closest is a mobile phone mast northeast of the boundary for the Electricity Grid Connection. This is known as the Cellnex Ireland mast, located c. 200m to the northeast of the Electricity Grid Connection and is c. 36m in height. This mast is owned and operated by Cellnex Ireland but is on land leased from Bord na Móna. Currently this mast provides space for Three Ireland as well as Imagine Broadband.

16.4.58 The Telecommunications and Aviation Assessment Report (**Appendix 16A**, Volume II) has identified that the Electricity Grid Connection infrastructure will cross a number of existing microwave radio links in the wider area.

Waste and Resource Management

16.4.59 The waste management baseline environment conditions for the Electricity Grid Connection are the same as those described for the Power Plant Area.

Gas Connection Corridor

Land Use

16.4.60 The Gas Connection Corridor will cross under mainly agricultural land of improved grassland, c. 9.6km total, with the exception of c. 1.4km to be routed in the R400 road. The Gas Connection Corridor will also cross two watercourses and the M6 motorway, R446 road and two local roads.

16.4.61 The Gas Connection Corridor is expected to be routed within the R400 road to the immediate north of the proposed Power Plant Area before tie-in with the proposed Derrygreenagh AGI.

Electricity Supply

16.4.62 The Gas Connection Corridor crosses under the Shannonbridge 220/110 kV - Maynooth 220 kV to the immediate north of the M6 motorway.

Gas Supply

16.4.63 The Northern end of the Gas Connection Corridor ties in with the Gas Pipeline to the West (BGE/77) north of Rochfortbridge c. 9.6km northwest of the Power Plant Area. There is no existing gas supply running through the Gas Connection Corridor and no requirement to consider in the baseline.

Wastewater Services (foul and surface water)

16.4.64 Limited information is available with regards to the Gas Corridor Connection. The exact location of the Gas Connection Corridor and associated infrastructure will be subject to detailed design by GNI, along with a separate planning application at a later date to this planning application.

Water Supply

16.4.65 Limited information is available with regards to the Gas Corridor Connection. The exact location of the Gas Connection Corridor and associated infrastructure will be subject to detailed design by GNI, along with a separate planning application at a later date to this planning application.

Telecommunications

16.4.66 Limited information is available with regards to the Gas Corridor Connection. The exact location of the Gas Connection Corridor and associated infrastructure will be subject to detailed design by GNI, along with a separate planning application at a later date to this planning application. An assessment of the Gas Connection Corridor has been carried out in so far as practicable.

Waste and Resource Management

16.4.67 The waste management baseline environment conditions for the Gas Connection Corridor are the same as those described for the Power Plant Area.

16.5 Predicted Impacts

16.5.1 This section contains an assessment of the potential effects of the Proposed Development and Overall Project on Material Assets (land use and built services) and Waste Management. The assessment considers the construction (including demolition), operational and decommissioning phases.

Do Nothing Scenario

16.5.2 If the Do-Nothing Scenario is taken forward, there would be no change in impacts on land use and built services (material assets).

16.5.3 If the Do-Nothing Scenario is taken forward, there will be no generation of waste products as a result of the Proposed Development and Overall Project.

16.5.4 If the Proposed Development were not to proceed, environmental monitoring and site management would continue, as required under the conditions of the IPC Licence (P0501-01).

Impact Assessment for the Power Plant Area

Construction Phase (Including Demolition)

16.5.5 The construction phase of the Power Plant Area will be for c. 39 months, the final details of which will be determined by the E&C Contractor.

Demolition Works

16.5.6 Demolition of the existing Derrygreenagh Works within the Power Plant Area is required to facilitate the development. While the effects of the demolition will be permanent, the demolition works activity themselves will be **Temporary** and related to site preparation.

16.5.7 The following buildings and structures to be demolished on the Power Plant Area include:

- Site Offices
- Boiler House
- Workshop #1
- Workshop #2
- Water Tank
- Storage Unit.

16.5.8 Ahead of the dismantling and demolition works, certain activities and surveys / inspections will need to be undertaken. Planning will not be required for some of these elements including decommissioning of existing depot which is being undertaken under the existing IPC licence (Registration Number P0501-01) for the Site.

16.5.9 Asbestos will be progressively removed throughout the works in full compliance with current regulations. The removal of all hazardous materials is to be carried out prior to demolition work commencing and disposed of in line with the relevant legislation. The coating on the external sheeting is known to contain some asbestos bearing material.

5.1.2 The proposed demolition process will be undertaken in the following general stages:

- Removal of re-usable plant.
- Progressive stripping and disposal of asbestos (if present).
- Stripping out of internal equipment and fittings for scrap.
- Breaking up of the internal concrete floors.

- Demolition of external components and structures.

16.5.10 The demolition works will include a number of different methodologies and it is anticipated that a combination of the following demolition methods will be used for the proposed demolition works:

- Manual removal of asbestos and asbestos containing materials (if / where required).
- Dismantling (reverse installation).
- High Reach Demolition Plant.
- Hot Works (cutting) to enable dismantling.
- Cranage.
- Vibration Pecker to break out concrete into smaller manageable sections.
- Manual gas / plasma cutting - cutting electrically conductive materials like mild steel, stainless steel, copper, aluminium.
- Hydraulic shears / crushers – used to demolish reinforced concrete and other materials.

Land Use

16.5.11 The construction phase of the Power Plant Area will require vegetation clearance for the Contractor working areas, access tracks and site compounds, as well as the footprint of the new buildings / infrastructure. This will result in some habitat loss. In the south-east section of the Power Plant Area, within the Drumman Bog, an area dominated by cutover peat will be used as a storage area for peat excavated during construction. This will result in a **Permanent**, **Not Significant** and **Negative** effect on the lost vegetation, refer to **Chapter 9** (Biodiversity).

16.5.12 The Power Plant will be located on a brownfield site (light industrial). As noted above, the Derrygreenagh Works will be demolished before construction works commence on-stie. The construction phase of the Power Plant Area will have a **Negative**, **Moderate** and **Short-term** impact on land use.

16.5.13 Construction of the Power Plant will be visible in some areas as the land use changes from a light industrial use to a construction site, with temporary fencing and construction plant and machinery, refer to **Chapter 10** (Landscape and Visual).

Electricity Supply

16.5.14 During the construction phase, electricity will be required by the Contractor, and this will likely be provided to the construction compound using a temporary power supply via a low voltage rural connection or using diesel generators. The power requirements for the construction phase will be relatively minor. As a result, for the existing electricity network, the significance of impact without mitigation will be **Neutral**, **Slight** and **Short-term** in duration.

16.5.15 During construction, a 220 kV high voltage cable will be installed between the Generator Step-Up Transformer, located in the electrical annexe (within the Power Plant Area) and the 220 kV Substation, located on the western side of the R400 road. This cable will be buried and will cross under the road via the existing discussed light railway underpass bridge to connect to the 220 kV Substation.

16.5.16 While there are some overhead electricity lines within the vicinity of the Power Plant Area, it is also possible that there might be some underground electricity cables discovered during the proposed works, particularly near existing buildings and infrastructure. Damaging an underground electricity cable may have the potential to

cause serious harm or death. An existing overhead local electricity supply line may pose a hazard to tall vehicles, excavators, etc. travelling underneath. All proposed works being carried out on overhead or underground electricity cables will be done in consultation with ESB Networks to ensure there is no impact on existing users.

16.5.17 However, during the construction phase there will be an impact on the existing electricity supply network, as connections are made to the National grid. The impact will be **Negative**, **Slight** and **Temporary** in duration.

16.5.18 Electricity will be supplied to the construction compound using a temporary power supply or diesel generators, so there will be no impact or disruptions on the existing electricity network.

Gas Supply

16.5.19 During the construction phase, underground gas pipework connections will be laid between the both the CCGT and OCGT and the Gas Connection Above Ground Infrastructure (Derrygreenagh AGI) Compound.

16.5.20 The Derrygreenagh AGI Compound will be located to the north-west of the Power Plant Area, adjacent to the R400 road. The gas pipeline network will transport natural gas from the AGI to the CCGT and OCGT. The gas pipe will be installed in a below ground concrete trench, covered where required with suitable traffic-bearing cover. The facility will be designed to Gas Network Ireland (GNI) specifications. The gas connection will have disruptions to the national network during this process. However, the impact will be **Negative**, **Slight** and **Temporary** in duration.

16.5.21 However, during the construction phase there will be no requirement for natural gas at the construction compound. Therefore, there will be no impact on the existing gas transmission network.

Wastewater Services (Foul, Process, and Surface Water)

16.5.22 Foul: During the construction phase, an area to the immediate north of the Power Plant Area will be used as the construction compound and will include welfare facilities. Sewage effluent arising from these facilities, will be collected in sealed storage tanks and portable self-contained toilet units for removal by tanker to an authorised Wastewater Treatment Plant (WWTP). As this control measure will be incorporated into the Site set-up, additional specific mitigation measures are therefore not required to address foul sewage during the construction phase and are not discussed further.

16.5.23 Surface: During the construction phase, the following potential surface water impacts may occur:

- Sedimentation of surface water features from construction works.
- Pollution of surface waters from accidental spills and leaks of fuels and chemicals.

16.5.24 Construction activities such as earthworks, excavations, site preparation, levelling and grading operations result in the disturbance and excavation of soils. Exposed soil is more vulnerable to erosion during rainfall events due to loosening and removal of vegetation and increased runoff rates. Surface runoff from such areas can contain excessive quantities of fine sediment, which may eventually be transported to watercourses where it can result in adverse impacts on water quality.

16.5.25 Other potential sources of fine sediment during construction works include water runoff from earth stockpiles, dewatering of excavations (surface and groundwater), mud deposited on site and local access roads, and that which is generated by the construction works themselves or from vehicle washing.

16.5.26 The construction compounds will consist of a mixture of permeable, semi-permeable and hardstanding areas. The construction compounds will be provided with drainage systems designed in accordance with EN 12056 and provided with silt traps and, if required, hydrocarbon interceptors. The surface water will infiltrate into the ground and/or be discharged into the local area drainage system. A detailed drainage plan for the construction phase will be developed during the detailed design phase by the EPC contractor.

16.5.27 During the construction phase, a sediment trap will be installed on-site, and water will be discharged to the Mongagh River to the north of the Power Plant Area via a discharge pipe and a local field drain. The impact of a high sediment load entering this river during construction could impact on both water quality, the hydromorphology and the habitat, refer to **Chapter 9** (Biodiversity). The importance of the Mongagh River is considered to be high; the impact magnitude is considered to be **Slight**, **Adverse**, **Direct** and **Temporary**; which combined would result in a **Moderate** effect on this receptor, refer to **Chapter 12** (Water Environment).

16.5.28 The importance of the Mongagh River is considered to be high; the impact is considered to be **Slight, Adverse, Direct** and **Temporary**.

Water Supply

16.5.29 During the construction phase a temporary water supply for construction works will be provided. There is sufficient capacity in the existing supply to facilitate the proposed construction activities and as such the potential impact on the existing water supply is **Neutral, Slight** and **Short-term.**

Telecommunications

16.5.30 During the construction phase, the Cellnex Ireland mast located c. 150m to the south of the Power Plant Area, has the potential to be impacted by construction phase activities, including vibrations. However, the telecoms mast is located outside the redline boundary and therefore the likely significant effects to this mast during the construction phase will be **Negative** and **Temporary** but **Not Significant**.

16.5.31 During the construction phase communications supplies to the AGI and Power Plant will be laid. Power and communications supplies to the Power Plant Area will be provided by cables running in a below ground concrete trench, covered where required with suitable traffic-bearing cover. A short-term connection outage may be required to facilitate this connection. The magnitude of impact will be **Negligible** and the significance of impact without mitigation will be **Slight** and **Temporary** in duration.

16.5.32 In the unlikely event that any unknown services are discovered during the construction phase, there is the potential to impact on local network supplies, causing a potential **Temporary, Slight** and **Negative** effect.

Waste Management — Demolition Waste

16.5.33 **Table 16.9** summarises the main types of materials that would be used and the wastes that are likely to arise during the demolition works.

Table 16.9: Estimated Types of Material Use and Waste Arising from the Demolition Phase

ACTIVITY	MATERIAL USE	WASTE ARISING
Demolition	• Installation of building structures.	• Demolition of non-load bearing elements such as masonry infill walls, masonry partition walls, steel access platforms, etc. • Removal of roofs and wall cladding. • Controlled demolition of the structural frame of buildings from roof to ground level, including ground floor slabs, ground beams and pile caps if found. • Existing foundations, substructures and services which will affect the construction of the Power Plant Area will be excavated and demolished and diverted where required. • Materials will be segregated for recovery and recycling as much as possible. • Plant and equipment that can be used elsewhere on other Bord na Móna sites will be transferred to the appropriate sites identified. • All other materials will be segregated, classified and disposed of offsite. • Waste from workers: offices and rest areas / canteens.
Site preparation and earthworks, including excavation	• Fill material for construction purposes. • Primary / secondary / recycled aggregates for ground stabilisation. • Topsoil and subsoil for landscaping and restoration.	• Surplus excavated materials. • Surplus topsoil and subsoil. • Unsuitable and made ground and excavated materials, including peat and unsuitable soil excavated beneath the Power Plant Area. Refer to **Appendix 5B**. Constructed Peat Deposition Areas (PDA) will be used. • Vegetation from site clearance. • Clearance of redundant infrastructure. • Clearance of hardstanding.

16.5.34 A number of buildings within the existing Derrygreenagh Works will require demolition as part of the Proposed Development to facilitate construction of the Power Plant Area (refer to the CEMP (**Appendix 5A**) for more detail on demolition works). These existing buildings include offices, workshops and associated buildings which will be demolished and replaced with new offices, workshop and ancillary units designed to serve the Power Plant Area.

16.5.35 The single storey office building is a load bearing masonry structure with a concrete tiled roof, and the demolition process will follow that of a domestic house. Plant and machinery will breakdown the roof and walls and waste materials will be removed offsite to a waste facility. Following this, the concrete foundations will be dig up, cut out and disposed of accordingly. However, depending on the depth, some buried foundations may need to remain. Any excavations will be backfilled with imported gravel and the site will be levelled.

16.5.36 The workshops and boiler house are cladded steel frame structures. There is the potential for asbestos cladding in some areas of the workshop. The total potential asbestos cladding to be removed is c. 2,400m^2. This will be removed first by a competent asbestos contractor, and the remaining cladding will be removed and disposed of accordingly. The steel frames will be dismantled and recycled, and the foundations will be dug out and removed. Any excavations will be backfilled with imported gravel and the site will be levelled.

16.5.37 The estimated demolition waste is presented in **Table 16.10**.

Table 16.10: Estimated Demolition Waste

WASTE TYPE	LoW CODE	ESTIMATED QUANTITIES (M^3)
Strip Concrete	17 01 01	375 m³
Floor slab concrete	17 01 01	1,650 m³
Masonry	17 03 02	800 m³
Cladding area	17 06 04	6,475 m²
Asbestos containing cladding	17 06 01	2,400 m²

16.5.38 There will be concrete material generated from the demolition of structures onsite. If any of the material is to be reused on-site as a product (and not as a waste), this will be done in accordance with the relevant regulatory approval as required.

16.5.39 It is anticipated that a large proportion of the materials resulting from the demolition will be recycled and a record will be kept demonstrating that the maximum level of recycling and reuse has been achieved. Plant and equipment that can be used elsewhere on other Bord na Móna sites will be transferred to the appropriate sites.

16.5.40 The precise composition and volume of this waste is dependent on several factors and will be further informed by the contractor, based on their experience of similar demolition works. It is assumed that all demolition waste will require off-site management.

16.5.41 In addition, site clearance will be required including soil, vegetation and hardstanding. Where possible, uncontaminated material will be reused on-site and if deemed unsuitable for reuse on-site, an outlet for offsite reuse will be sought.

16.5.42 Excavation earthwork impacts will relate to removal of made ground and peat, including any superficial peats. Infill earthwork will mainly relate to the import and compaction of acceptable fill material to achieve the required engineering design and grades.

16.5.43 Where possible excavated materials will be reused on-site. If the material is considered unsuitable for reuse on-site an outlet for offsite reuse will be sought. If reuse is not possible the material will be removed to an authorised facility by authorised waste contractors for composting or disposal as appropriate.

16.5.44 A permanent Peat Deposition Area (PDA) will be designed and constructed provided on cut-over peatland to the north-east of the Power Plant Area (refer **Appendix 2A**, Drawing Ref: S7060-8310-0006) to store excess peat and overburden soil material which cannot be used in localised landscaping or as backfill. It is estimated that approximately 300,000m^3 of excess peat and soil from across the entire Scheme will be required to be stored within the permanent PDA.

16.5.45 Peat will be deposited to a maximum height of 1m above ground level across a 222,410m² area cut-over peatland. Once excavations are completed and following the

commissioning of the project, the PDA will be allowed to naturally revegetate. Refer to **Appendix 5B,** Peat and Spoil Management Plan.

16.5.46 Bulk soil, subsoils or other material will be stored in designated areas only. Only uncontaminated material will be used on-site for the purpose of fill and site levelling. General housekeeping and packaging will also generate waste materials, as well as typical municipal wastes generated by construction employees, including food waste. If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the site and in adjacent areas.

16.5.47 In the absence of mitigation, the effect on the local and regional environment is likely to be **Temporary**, **Moderate** and **Negative**.

Waste Management — Construction Waste

16.5.48 Waste will be generated during all stages of the construction works. **Table 16.11** summarises the types of waste materials that will be used and the waste that is likely to arise during the construction phase of the Power Plant Area.

Table 16.11: Estimated Types of Material Use and Waste Arising from the Construction of the Power Plant Area

ACTIVITY	MATERIAL USE	WASTE ARISING
Construction	Main construction materials including: • Aggregates (including well graded materials, granular fill, backfill, pipe bedding and drainage media). • Asphalt and bituminous materials. • In-situ cast concrete. • Steel reinforcing bar (for reinforced concrete). • Precast concrete products (components, kerbs, drainage pipes, chambers and channels). • Lighting • Stone • Paving • Fencing	• Excess, offcuts and broken / damaged construction materials. • Packaging from materials delivered to site. • Construction worker wastes from offices and rest areas / canteens. • Waste oils from construction plant.

16.5.49 During the construction phase, waste will be produced from surplus materials such as broken or off-cuts of timber, plasterboard, concrete, tiles, bricks, etc. Waste from packaging (cardboard, plastic, timber) and oversupply of materials may also be generated. The contractor will be contractually required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

16.5.50 Waste will also be generated from construction phase workers *e.g.* organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and, potentially, sewage sludge from temporary welfare facilities provided on-site. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated in small volumes from site offices.

16.5.51 The precise composition and waste management route of the construction waste is dependent on several factors and will be further informed by the Contractor, based on their experience of similar developments. It is assumed that all construction waste will require off-site management.

16.5.52 Hazardous waste arisings are expected to comprise small quantities of oils, chemicals and similar materials typically used as part of construction activities. Procedures for the storage and management of these wastes will be set out in the contractor's Construction & Demolition Resource and Waste Management Plan (C&D RWMP). Copies of all Waste records and Hazardous Waste Transfer Forms for wastes removed from site will be retained by the contractor for the required timeframe under legislation.

16.5.53 As noted above, the construction phase will have the potential to produce municipal waste (site office, canteen), wastewater (site welfare facility), construction waste (wood, packaging, metal, etc.) and hazardous waste which will need to be processed at waste processing facilities.

16.5.54 The quantities of these wastes are not anticipated to be large. The effect on the local and regional environment during the construction phase will be **Negative**, **Short-term** but **Not Significant**.

Operational Phase

Land Use

16.5.55 During the operational phase the land use will change from a light industrial use to industrial / power infrastructure on a much large scale.

16.5.56 The operational phase will have a **Negative**, **Significant**, **Long-term** and **Direct** impact on land use.

Electricity Supply

16.5.57 During the operational phase, it is envisaged that the CCGT and OCGT units will have a design life of 25 years.

16.5.58 The electrical outputs from the CCGT and OCGT units will be fed to the high voltage transformers where the voltage will be stepped up to the transmission voltage onto the 220 kV Substation. The power will be transferred via an underground cable linking the Power Plant Area (east of R400) to the tail fed 220 kV Substation (west of the R400) via an existing road underpass.

16.5.59 It is anticipated that the new electrical infrastructure of the Power Plant Area will likely have a **Long-Term**, **Positive** and **Significant** effect on the existing electricity supply network during operations.

Gas Supply

16.5.60 During the operational phase the CCGT and OCGT units will operate off natural gas as the primary fuel. Both plants will be dual fuel and capable of operating off secondary fuel.

16.5.61 During operations, the AGI will regulate gas pressure and temperature to a level suitable for use in the CCGT and OCGT. As noted above, natural gas will be forwarded from the Pressure Regulating Station (PRS) outlet in the AGI Compound to the both the CCGT and OCGT via a buried gas pipework. The detailed design of the AGI will be completed by GNI.

16.5.62 The new gas infrastructure will have a high sensitivity as this infrastructure will tie into the existing national network (high sensitivity) for a gas supply. The magnitude of impact will be **Significant** as there will be a major change in utilities required during operational phase of the Power Plant Area. As a result, the existing electricity network, the significance of impact without mitigation will be **Significant**, **Positive** and **Long-Term** in duration.

Wastewater Services (Foul, Process and Surface Water)

16.5.63 Raw: During the operational phase, raw water will be treated in the water treatment plant (WTP) to produce the potable and demineralised water required for the Power Plant. The water treatment plant is located on the east side of the plant adjacent to the raw and demineralised water tanks (refer to EIAR Volume II, **Appendix 5C**, Figure Ref: S7060-8050-0024).

16.5.64 The water treatment process will consist of filtration, and either a resin based or a reverse osmosis-based treatment system. A resin-based system will utilise an acid and an alkali for resin regeneration. If a softening plant is required for pre-treatment this will utilise a brine solution for regeneration. These chemicals will be delivered by road tanker and stored on site in bunded storage tanks.

16.5.65 Foul: An assessment of the existing site percolation area has been undertaken for inclusion in the 'Site Characterisation Form' submitted with the application. It is determined that the existing drainage and subsoil percolation rates have insufficient capacity to manage the proposed discharge rates from the whole site foul water load of approximately 6m³ day based on 100 l/d/person of effluent and 60 people.

16.5.66 Foul water will therefore be treated in a packaged treatment plant and then discharged to the process wastewater plant and then to the consented discharge point on the Yellow river.

16.5.67 Impacts are not anticipated based on the embedded design measures, and the lack of connection with other utilities. The significance of impact will be **Neutral** and **Imperceptible**.

16.5.68 Surface: During the operational phase surface water runoff will be generated from all surfaces within the Power Plant Area which are exposed to rainwater, including areas where water is used to wash down. This includes all hardstanding surfaces, roofs, and other impermeable surfaces.

16.5.69 The drainage systems are designed in accordance with the Sustainable Urban Drainage System (SUDs) guidance and EN 752 and EN 12056.

16.5.70 All surface water arising from hardstanding areas within the Power Plant Area site will be collected in an open topped below ground concrete attenuation tank. The attenuation tank working volume will be approximately 6,600 m³. Power Plant Area

16.5.71 All surface water runoff will be discharged to the attenuation tank via a hydrocarbon interceptor and silt trap. Water from roof drains may discharge directly to the attenuation tank. Water in the attenuation tank will be pumped to the consented discharge point on the Mongagh River. The discharge flow is monitored and controlled to maintain the rate within the limits specified in the permit.

16.5.72 Discharge to the Mongagh River can be stopped by the plant operators both locally and remotely in the event that there is an event that could lead to the discharge from the attenuation tank breaching the Emission Limit Values (ELVs) e.g., a fire.

16.5.73 Impacts on receiving waterbodies from anthropogenic pollutants in surface water runoff (including accidental fuel spillages from tanks and pipelines) are not anticipated**,** based on the embedded design measures, including bunding of fuel tanks and inclusion of interceptors within the drainage system. As a result, the significance of impact will be **Neutral** and **Imperceptible**.

16.5.74 A flood risk assessment (FRA) is presented in **Appendix 12.A**, Volume II of the EIAR.

16.5.75 Process: During operations, process wastewater will be discharged from the Site, which comprises primarily of effluent from the WTP and from boiler blow-down.

16.5.76 Wastewater from the WTP comprises of an aqueous solution containing all the solids and minerals of the raw water. The volumes of effluent generated depend on the demineralisation process used. Reverse Osmosis based processes produce a higher volume of wastewater than a resin-based demineralisation process. With both technologies the total amount of solids and minerals in the wastewater is the same, therefore the concentration per unit volume of wastewater is lower with RO and higher with resin-based plants. The wastewater from the WTP is discharged to the process WTP.

16.5.77 The demineralised water contains residual amounts of non-volatile impurities. These impurities build up in the drums of the HRSG of the CCGT plant. Build-up of the impurities will lead to corrosion and other issues within the steam and water circuit.

16.5.78 All process wastewater arising from the facility will be collected in the process wastewater tank prior to discharge. The tank will be an open topped below ground concrete structure. Monitoring and treatment system will be located at ground level adjacent to the tank.

16.5.79 The process wastewater tank provides a buffer volume to allow the plant to operate for a period when discharge to the consented discharge point on the Yellow River is not possible. The process wastewater tank is provided with a monitoring and treatment system. The wastewater is pumped from the tank to the discharge point via a pipeline. The discharge pipe is provided with pH, temperature and flow measurements, sampling and injection points and a recirculation loop. Discharge only takes place if the quality of the wastewater is within the ELVs for the consented discharge point. When not discharging or if the wastewater lies outside of any of the ELVs for the consented discharge point, the wastewater is recirculated back to the process wastewater tank. The wastewater is dosed automatically, if required, to regulate the pH etc within the ELV limits.

16.5.80 The process wastewater tank will be sized to allow 24 hours of plant operation without discharge to the Yellow River. It is anticipated that the working volume of the tank will be approximately 500m^3. The process wastewater discharge pipe is to extend west of the R400 road and discharge to the Yellow River at approximately 3km south-west of the Power Plant Area.

16.5.81 Impacts on receiving waterbodies from the above process wastewaters in the surface water drainage system are not anticipated, based on the embedded design measures.

Water Supply

16.5.82 During the operational phase, potable water will be supplied to the Site from the existing groundwater well. The water will be treated to provide potable and demineralised water for the site.

16.5.83 The Power Plant Area will use the onsite 'PW1' to provide the water requirements for the Proposed Development and Overall Project of 720m^3/d.

16.5.84 The abstracted water will be stored in a raw water tank. This raw untreated water will be stored in 1 No. bulk storage tank filled from water abstraction (720m^3/d) before treatment on-site. The Power Plant Area will have 2 No. 7,850m^3 gross capacity demineralised water storage tanks (with a diameter of 25m and height of 16m). These tanks provide a demineralised water reserve for both the CCGT and OCGT plants. The reserve is provided to cover supply interruptions due to failures in the raw water supply or the demineralised water production plant.

16.5.85 Fire water will be stored in a reserved section of the raw water tank.

16.5.86 The demineralised water storage tank which will be used for process water makeup of CCGT and denox water injection during limited secondary fuelling operations on CCGT and OCGT.

16.5.87 The potential impact on water supply for the operational phase is **Negative**, **Moderate**, and **Long-Term**.

Telecommunications

16.5.88 Telecommunications supplies during the operational phase of the Power Plant Area will be provided by cables buried in parallel with the electrical connection and utilising existing on-site connections serving the Derrygreenagh Works site currently.

16.5.89 During the operational phase, the Cellnex Ireland mast located c. 150m to the south of the Power Plant Area, is likely to be impacted by the constructed Power Plant infrastructure in providing links to the north of the constructed Power Plant. The magnitude of impact without mitigation will be **Direct**, **Negative**, **Significant** and **Permanent**.

Waste Management

16.5.90 **Table 16.12** summarises the types of waste materials that is likely to arise during the operational phase of the Power Plant Area.

Table 16.12: Estimated Types of Waste Arising during the Operational Phase of the Power Plant Area

WASTE TYPE	LoW Code Entry
General office waste	20 03 01
Scrap Metal	17 04 07
Dry mixed waste	15 01 06
Oil Filters	16 01 07
Ink toners	08 03 13
Fluorescent tubes	20 01 21
Oil contaminated rags	15 02 02
Misc hazardous waste	15 02 02
Oily rags	15 02 02
Waste Oil	13 02 08
Oily Water	13 05 07
Aerosols	16 05 04
Cutting oil liquid	16 05 08
R410A Cores	14 06 01
Deha Tank Residues	14 06 03
Dry mixed waste	15 01 06
Oil Filters	16 01 07
Non-hazardous waste	16 01 20
Non-hazardous waste	16 05 05
Zok (Cleaning fluid)	16 05 07
Non-hazardous waste	16 06 05
Scrap Metal	17 04 07
Wood	17 02 01

WASTE TYPE	LoW Code Entry
WEEE	20 01 35
Lead Battery	16 06 01

16.5.91 The potential impacts on the environment of improper, or a lack of, waste management during the operational phase would be a diversion from the priorities of the waste hierarchy which could lead to small volumes of waste being sent unnecessarily to landfill. In the absence of mitigation, the effect on the local and regional environment is likely to be **Indirect**, **Long-Term**, **Significant** and **Negative**.

16.5.92 In terms of other waste used as part of the operation and running of the Power Plant small quantities of oils and chemicals (*i.e.,* lubrication oils, propane, CO_2 cleaning agents and glycol / antifreeze) will also delivered to the Site. Such chemicals may result in small quantities of operational waste, and the magnitude of impact is considered to be **Negligible** and **Long-Term**.

16.5.93 The supply of secondary fuel which will be contained in 2 No. tanks within a bunded area to the south of the Site (east of the OCGT Plant). A fuel treatment plant will be required to remove any contaminants from the secondary fuel that may accumulate during storage, which will be contained within the bunded area prior to its safe disposal offsite at a suitably licenced facility.

16.5.94 The safe disposal of contaminants from the secondary fuel supply will be **Not Significant** in terms of amount or frequency.

Decommissioning Phase

16.5.95 A Closure, Remediation, Aftercare Management Plan (CRAMP) will be prepared and agreed with the EPA.

16.5.96 The CRAMP will consider the potential environmental risks at the Site and provide guidance and appropriate mitigation procedures as necessary, to minimise risk.

16.5.97 Effects arising from the process of decommissioning of the Power Plant Area are considered to be of a similar nature to those arising during construction but will be shorter in duration and are therefore have not been considered separately.

16.5.98 The decommissioning phase will have the potential to produce municipal waste (site office, canteen), wastewater (site welfare facility) and demolition waste (wood, packaging, metal, etc.) which will need to be processed at local waste processing facilities. The quantities of these wastes are anticipated to be larger than other phases (due to the nature of the Power Plant Area structures), however these are largely composed of metal and other recyclable materials which would be brought to specialised facilities for processing / recycling such items.

16.5.99 Any other wastes (such as oils) would be collected by an appropriately licensed waste collector. There would be a potential **Short-term**, **Moderate** and **Negative** impact on local and regional waste services.

Impact Assessment for Electricity Grid Connection

Construction Phase

16.5.100 The construction phase of the Electricity Grid Connection will be for c. 33 months, the final details of which will be determined by the E&C Contractor.

Land Use

16.5.101 The proposed Electricity Grid Connection is located on a brownfield site in the Derryarkin and Ballybeg Bogs. There is limited mature trees and grassland, and cutover bogs with varying degrees of vegetation. The construction phase will require the removal of these mature trees, grassland and vegetation within this area. The sensitivity of the vegetation to be removed is low.

16.5.102 The proposed overhead Electricity Grid Connection route will also traverse over peat bogs.

16.5.103 The proposed 220 kV Substation will be located on a brownfield site on the existing narrow gauge railway route on a mixture of made ground and bare peat ground.

16.5.104 Construction of the Electricity Grid Connection (the electricity grid connection and 220kV Substation) will have a **Negative, Significant** and **Short-term** impact on land use.

16.5.105 The proposed 400 kV Substation site will be located on agricultural land adjacent to the west of the Ballybeg Bog. The construction of the 400 kV Substation will have a **Negative, Significant** and **Short-term** impact on land use.

16.5.106 Construction of the Electricity Grid Connection will be visible in some areas as the land use changes from peat bogs to a construction site, with temporary fencing and construction plant and machinery. Refer to **Chapter 10** (Landscape and Visual).

Electricity Supply

16.5.107 During the construction phase, electricity will be required by the Contractor, and this will be provided to the construction compound using a temporary power supply via a low voltage rural connection or using diesel generators. The power requirements for the construction phase will be relatively minor. As a result, for the existing electricity network, the significance of impact without mitigation will be **Neutral**, **Slight** and **Short-term** in duration.

16.5.108 During construction the following infrastructure will be required for the Electrical Grid Connection and will include all above ground and underground connections from the Power Plant Area to the connection to existing 400kV transmission line to the south. This will comprise:

- 220 kV GIS-AIS Substation
- 220 kV Overhead Line
- 220 kV Line-cable Interface Compound
- 220 kV Underground Cable Connection
- 400 kV GIS Substation with outdoor transformer bays at entry point to the 400kV transmission network
- 2 No. 400 kV Strain Towers

16.5.109 While there are some overhead electricity lines within the vicinity of the Electrical Grid Connection, it is also possible that there might be some underground electricity cables discovered during the proposed works, particularly near existing buildings and infrastructure. Damaging an underground electricity cable may have the potential to

cause serious harm or death. An existing overhead local electricity supply line may pose a hazard to tall vehicles, excavators, etc. travelling underneath. All proposed works being carried out on overhead or underground electricity cables will be done in consultation with ESB Networks to ensure there is no impact on existing users.

16.5.110 During the construction phase there each element of the Electrical Grid Connection will be constructed at different stages. However, there will be a significant change in utilities required to connect into the National grid. As a result, significance of impact without mitigation will be **Significant**, **Negative** and **Short-term**.

Gas Supply

16.5.111 There will be no requirement for natural gas during the construction phase of the Electricity Grid Connection; therefore, there will be no impact on the existing gas network.

Wastewater Services (Foul and Surface Water)

16.5.112 Foul: During the construction phase, there will be two temporary construction compounds, an area to the north of the 220 kV substation site and another area north of the 400 kV substation, which will be used as the construction compounds, and will include welfare facilities.

16.5.113 As noted above, sewage effluent arising from facilities, will be collected in tanks and portable self-contained toilet units for removal by tanker to a licensed WWTP. As this control measure will be incorporated into the Site set-up, additional specific mitigation measures are therefore not required to address foul sewage during the construction phase and are not discussed further.

16.5.114 Surface: Construction activities such as earthworks, excavations, site preparation, levelling and grading operations result in the disturbance and excavation of soils. Exposed soil is more vulnerable to erosion during rainfall events due to loosening and removal of vegetation and increased runoff rates. Surface runoff from such areas can contain excessive quantities of fine sediment, which may eventually be transported to watercourses where it can result in adverse impacts on water quality.

16.5.115 During the construction phase, all surface water runoff will be attenuated and treated prior to being released within the proposed site. The drainage outfall from the proposed site is routed through existing settlement ponds that remain in-situ from the previous site use.

16.5.116 Temporary stilling ponds / settlement ponds will be used to attenuate runoff from works areas (*i.e.*, hardstanding areas, construction compound *etc.*) of the Site during the construction phase. The settlement ponds will be located towards the end of collector drains, close to where the treated water will be discharged to field drains / main drains.

16.5.117 During the construction phase, a water level indicator such as a staff gauge will be installed in each settlement pond with marks to identify when sediment is at 10% of the stilling pond capacity. Sediment will be cleaned out of the pond if it exceeds 10% of pond capacity.

16.5.118 Interceptor drains will convey clean runoff water around working areas to the existing downstream drainage system (field drains and main drains). Where required, interceptor drains will be installed in advance of any construction works commencing. Where possible (depending on orientation), existing field drains can be used as interceptor drains. The interceptor drains will be installed in advance of any main construction works commencing. Once construction phase works are completed, it is envisaged that the majority of the interceptor drains will be removed, with the exception being where original field drains were used.

16.5.119 Collector drains will be used to intercept and collect runoff from areas of hardstand. During the construction phase temporary settlement ponds will be used to attenuate and treat runoff from hardstand areas and treated water will then discharge into existing field drains and main drains. Temporary settlement ponds will be removed at the end of the construction phase.

16.5.120 Drainage swales will remain in place to collect runoff from roads and hardstanding areas of the electricity grid connection during the operational phase.

16.5.121 Check dams will restrict flow velocity, minimise channel erosion and promote sedimentation behind the dam. The check dams will be installed as the interceptor drains are being excavated. Check dams may also be installed in some of the existing field drains on the proposed site, downstream of where drainage swales connect in. The proposed check dams will be made up of straw bales or stone, or a combination of both depending on the size of the drainage swale it is being installed in. Check dams will not be used in any natural watercourses, only artificial drainage channels (field drains) and interceptor / collector drains. The check dams will be left in place at the end of the construction phase.

16.5.122 Dewatering silt bags allow the flow of water through them while trapping any silt or sediment suspended in the water. The silt bags provide a passive non-mechanical method of removing any remaining silt contained in the potentially silt-laden water collected from works areas within the site. Dewatering silt bags are also used where water is pumped temporarily from excavations (e.g., pylon bases). Water will flow, via a pipe, from the stilling ponds into the silt bag.

16.5.123 Silt fences will be installed as an additional water protection measure around existing watercourses in certain locations, particularly where works are proposed within the 50m buffer zone of a stream.

16.5.124 Silt traps will be installed in field drains downstream of drainage outfalls from works areas. The purpose of the silt traps is to capture silt by means of slowing water flow within the field drains.

16.5.125 The routes of any natural drainage features will not be altered as part of the Proposed Development. The potential impact on surface water during the construction phase is **Neutral, Imperceptible** and **Short-term**, refer to **Chapter 12** (Water Environment).

Water Supply

16.5.126 During the construction phase a temporary water supply for construction works will be provided if deemed necessary.

Telecommunications

16.5.127 During the construction phase, the Cellnex Ireland mast located at the northern end of the Electricity Grid Connection route has the potential to be impacted by construction phase activities.

16.5.128 However, the telecoms mast is located outside the redline boundary and therefore the likely significant effects to this mast during the construction phase will be **Negative**, **Temporary**, but **Not Significant**.

16.5.129 In the unlikely event that any unknown services are discovered during the construction phase, there is the potential to impact on local network supplies, causing a potential **Temporary**, **Slight** and **Negative** effect.

Waste Management

16.5.130 Waste will be generated during all stages of the construction works. **Table 16.13** summarises the types of waste materials that will be used and the waste that is likely to arise during the construction phase of the Electricity Grid Connection.

Table 16.13: Estimated Types of Material Use and Waste Arising from the Construction of the Electricity Grid Connection

ACTIVITY	MATERIAL USE	WASTE ARISING
Construction	Main construction materials including: • Stone • Asphalt • Geotextile • Lighting fixtures and fittings • Paving. • Fencing. • Steelwork • Concrete • Timber • Cladding • Doors • Piping inc. fixtures and fittings • Cabling inc. fixtures and fittings • Switchgear • Instrumentation and control system	• Excess, offcuts and broken / damaged construction materials. • Packaging from materials delivered to site. • Construction worker wastes from rest areas. • Waste oils from construction plant. • Surplus excavated materials. • Surplus topsoil and subsoil. • Unsuitable and made ground and excavated materials, including peat and unsuitable soil excavated beneath the Power Plant Area. Refer to **Appendix 5B**. Constructed Peat Deposition Areas (PDA) will be used. • Vegetation from site clearance.

16.5.131 During the construction phase, waste will be produced from surplus materials such as broken or off-cuts of timber, plasterboard, concrete, tiles, bricks, etc. Waste from packaging (cardboard, plastic, timber) and oversupply of materials may also be generated. The Contractor will be contractually required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

16.5.132 Similar to the Power Plant Area, waste will also be generated from construction phase workers *e.g.* organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and, potentially, sewage sludge from temporary welfare facilities provided on-site. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated in small volumes from site offices.

16.5.133 The precise composition and waste management route of the construction waste is dependent on several factors and will be further informed by the Contractor, based on their experience of similar developments. It is assumed that all construction waste will require off-site management.

16.5.134 Hazardous waste arisings are expected to comprise small quantities of oils, chemicals and similar materials typically used as part of construction activities. Procedures for the storage and management of these wastes will be set out in the contractor's Construction & Demolition Resource and Waste Management Plan (C&D RWMP). Copies of all Waste

records and Hazardous Waste Transfer Forms for wastes removed from site will be retained by the contractor for the required timeframe under legislation.

16.5.135 As noted above, the construction phase will have the potential to produce municipal waste (site office, canteen), wastewater (site welfare facility), construction waste (wood, packaging, metal, etc.) and hazardous waste which will need to be processed at waste processing facilities.

16.5.136 The quantities of these wastes are not anticipated to be large. The effect on the local and regional environment during the construction phase will be **Negative**, **Short-term** but **Not Significant**.

16.5.137 A permanent Peat Deposition Area (PDA) is provided in the vicinity of the 400 kV Substation to store excess overburden material which cannot be used in localised landscaping or backfill. Excavated peat and soil arising from the formation of the substation foundation will be placed in a designed and dedicated deposition area in close proximity on land to the north of the 400 kV Substation (refer to **Appendix 5C**, Drawing Ref: S7060-8050-0055).

16.5.138 It is estimated that approximately 68,000m^3 of excess peat and soil will be required to be stored within the permanent PDA.

16.5.139 Peat will be deposited to a maximum height of 1m above ground level across a circa 75,300 m² area. Once excavations are completed and following the commissioning of the project, the PDA will be allowed to naturally revegetate.

16.5.140 A permanent PDA is provided in the vicinity of the 220 kV Substation to store excess overburden material which cannot be used in localised landscaping or backfill. Excavated peat and soil arising from the formation of the substation foundation will be placed in a designed and dedicated deposition area in close proximity on land to the southwest of the 220kV substation (refer to **Appendix 5C**, Drawing Ref: S7060-8050-0055).

16.5.141 It is estimated that approximately 40,200m^3 of excess peat and soil will be required to be stored within the permanent PDA. Refer to **Appendix 5B**, Peat and Spoil Management Plan.

16.5.142 Bulk soil, subsoils or other material will be stored in designated areas only. Only uncontaminated material will be used on-site for the purpose of fill and site levelling. General housekeeping and packaging will also generate waste materials, as well as typical municipal wastes generated by construction employees, including food waste. If waste material is not managed and stored correctly, it is likely to lead to litter or pollution issues at the site and in adjacent areas.

16.5.143 In the absence of mitigation, the effect on the local and regional environment is likely to be **Temporary**, **Moderate** and **Negative**.

Operational Phase

Land Use

16.5.144 During the operational phase the land use will be changed from a brownfield site and peat bogs to industrial / power infrastructure. The operational phase will have a **Negative**, **Significant, Long-term** and **Direct** impact on land use.

Electricity Supply

16.5.145 The Electricity Grid Connection has been designed in accordance with EirGrid Transmission policies and requirements. The connection method option is a new tail 220 kV substation with hybrid transmission infrastructure of overhead line and underground cable to a new looped in 400 kV substation at the 400kV Oldstreet-Woodland line. The new loop-in substation at the 400 kV line will consist of a 4-bay C-type design, which is

the connection method that best suits the proposed development because of the distance from Derrygreenagh Power to the Oldstreet-Woodland 400 kV line.

16.5.146 220 kV & 400 kV Substations: A local electricity back-up power supply is provided for the substations for light, heat and power purposes. A local supply is available to the existing Derrygreenagh Works. The local supply will be designed and constructed by ESB Networks.

16.5.147 It is anticipated that the new electrical infrastructure of the Electricity Grid Connection will likely have a **Long-Term**, **Positive** and **Significant** effect on the existing electricity supply network during operations.

Gas Supply

16.5.148 There will be no requirement for natural gas during the operational phase of the Electricity Grid Connection; therefore, there will be no impact on the existing gas network.

Wastewater Services (Foul, Process and Surface Water)

16.5.149 Foul: During the operational phase, there will be welfare facilities provided at the 200 kV and 400 kV Substation sites. A foul water holding tank will be provided at the Substation sites. The foul water tank will be and will be emptied at regular intervals. No other foul water sources will arise from the Electricity Grid Connection. The magnitude of impact will be **Neutral**, **Imperceptible** and **Long-Term.**

16.5.150 Surface: During the operational phase of the Electricity Grid Connection impacts to surface water are not envisaged, unless via routine or emergency maintenance of elements of the power transmission infrastructure. Potential impacts during such works may be similar to those envisaged during construction. The magnitude of impact will be **Neutral**, **Imperceptible** and **Long-Term.**

16.5.151 Process: During the operational phase, there will be no process water as part of the Electricity Grid Connection; therefore, there will be 'no change', as there will be no measurable change on existing utilities. The magnitude of impact will be **Neutral**, **Imperceptible** and **Long-Term.**

Water Supply

16.5.152 During the operational phase, surface, there will be no impact on existing water supplies as part of the Electricity Grid Connection. There will be 'no change', as there will be no measurable change.

Telecommunications

16.5.153 Telecommunications supplies during the operational phase of the Electricity Grid Connection will be provided by cables buried in parallel with the electrical connection and utilising existing on-site connections serving the Derrygreenagh Works site currently. In addition, a 36m high lattice steel towers will be located at each of the sub-station sites (Drawing Ref: BNM-DPS-E-2008). The substation compound will be surrounded by an approximately 2.6-metre-high steel palisade fence (or as otherwise required by Eirgrid). The layout of electrical equipment in the substation will be designed to EirGrid specifications.

Waste and Resource Management

16.5.154 The Electricity Grid Connection will generate waste from maintenance works on an infrequent basis. In the absence of mitigation, the effect on the local and regional environment is likely to be **Long-term**, **Negative** but **Not Significant**.

Decommissioning phase

16.5.155 Upon decommissioning of the Power Plant Area, the 220 kV Substation and 400 kV Substation and associated transmission infrastructure will remain in-situ and form part of the national grid infrastructure. Decommissioning of the Electricity Grid Connection is not envisaged and therefore not assessed under this EIAR.

Impact Assessment for Gas Connection Corridor

Construction Phase

Land Use

16.5.156 The Gas Connection Corridor route will cross under agricultural land for c. 9.6km, with the exception of c. 1.4km, to be routed in the R400 road. The Gas Connection Corridor will also cross two watercourses and roads.

16.5.157 A review of aerial imagery indicates that the corridor comprises a predominantly agricultural landscape, with fields of improved agricultural grassland with a number of hedgerows, treelines, and watercourses.

16.5.158 The land will be removed from agricultural production in the short-term, will be fenced on both sides with temporary access / crossing points to be agreed with each individual landowner.

16.5.159 During the construction phase, there will be a **Negative**, **Short-term, Moderate** and **Direct** loss of land along the proposed construction corridor.

16.5.160 Construction of the Gas Connection Corridor will be visible in some areas as the land use changes from agricultural land to a construction site, with temporary fencing and construction plant and machinery. Refer to **Chapter 10** (Landscape and Visual).

Electricity Supply

16.5.161 During the construction phase, electricity will be required by the Contractor, and this will be provided to the construction compound using a temporary power supply via a low voltage rural connection or using diesel generators. The power requirements for the construction phase will be relatively minor. As a result, for the existing electricity network, the significance of impact without mitigation will be **Neutral**, **Slight** and **Short-term** in duration.

16.5.162 While there are some overhead electricity lines within the vicinity of the Gas Connection Corridor, it is also possible that there might be some underground electricity cables discovered during the proposed works, particularly near existing buildings and infrastructure. Damaging an underground electricity cable may have the potential to cause serious harm or death. An existing overhead local electricity supply line may pose a hazard to tall vehicles, excavators, etc. travelling underneath. All proposed works being carried out on overhead or underground electricity cables will be done in consultation with ESB Networks to ensure there is no impact on existing users.

16.5.163 As a result, significance of impact without mitigation will be potentially **Neutral**, **Slight** and **Short-term** in duration.

Gas Supply

16.5.164 The Gas Connection Corridor route will contain the gas connection pipe and AGI at tie in location to be constructed between the Gas Pipeline to the West (BGE/77) c.9.6km to the north of the Power Plant Area. The Gas Connection Corridor is part of the Overall Project and will enable the Proposed Development to connect to the existing high pressure gas pipeline to the north via a tie-in connection (through an AGI requirement) and underground routing. The Gas Connection Corridor is not being included as part of

the planning application for the Proposed Development (as it will be applied for by Gas Networks Ireland (GNI) at a later date).

16.5.165 The gas connection will have disruptions to the National network during this process. However, the impact will be **Negative**, **Significant** and **Temporary** in duration.

16.5.166 There will be no requirement for natural gas during the construction phase of the Gas Connection Corridor; therefore, there will be no impact on the existing gas transmission network.

Wastewater Services (Foul, Process and Surface Water)

16.5.167 During the construction phase, construction welfare facilities will be provided, mostly likely at the construction compound. Sewage effluent arising from these facilities, will be collected in sealed storage tanks and portable self-contained toilet units for removal by tanker to an authorised WWTP. As this control measure will be incorporated into the Site set-up, additional specific mitigation measures are therefore not required to address foul sewage during the construction phase and are not discussed further.

Water Supply

16.5.168 During the construction phase, a temporary water supply for construction works will be provided, most likely by means of an existing water supply connection. This will be confirmed by the appointed contractor for the Gas Connection Corridor and a pre-connection application will be submitted to Irish Water for this temporary connection.

16.5.169 As a result, there is potential for a temporary impact to the existing mains water connection, by way of disruption in water supply in the local area. However, the magnitude of impact will be **Negligible** and the significance of impact without mitigation will be **Slight** and **Short-term** in duration.

Telecommunications

16.5.170 During the construction phase, communications supplies to the AGI will need to be laid. It is assumed that any power and communications supplies will be provided by cables running in parallel with the gas pipework route. A short-term connection outage may be required to facilitate this connection. The magnitude of impact will be **Negligible** and the significance of impact without mitigation will be **Slight** and **Temporary** in duration.

16.5.171 In the unlikely event that any unknown services are discovered during the construction phase, there is the potential to impact on local network supplies, causing a potential **Temporary, Slight** and **Negative** effect.

Waste Management

16.5.172 During the construction phase of the Gas Connection Corridor, the following will be required:

- site establishment and preparation works, including site clearance (including vegetation removal), earthworks (including soil stripping and storage and site levelling) and excavations, temporary fencing, the creation of temporary construction access points, and the temporary alteration of the position of services and utilities apparatus and connections; and
- temporary construction and laydown areas comprising hardstanding, laydown and open storage areas, including materials and plant storage, contractor compounds and construction staff office and welfare facilities, generators, vehicle parking facilities, security fencing and gates, external lighting, temporary roadways and haul routes and signage.

16.5.173 The pipeline will mainly be installed through an open cut method whereby a trench will be excavated, and the pipe laid approximately 1.2m below ground.

16.5.174 The temporary corridor width required for open cut pipeline construction is 30m. This width allows topsoil, subsoil and spoil to be excavated and stored adjacent to point of generation, stringing and welding of sections of pipe, access along the route, and laying of the pipe within the trench prior to backfilling.

16.5.175 Spoil material, overburden and topsoil excavated during construction will be stored temporarily within the Site.

16.5.176 Waste will be generated during all stages of the construction works. In the absence of mitigation, the effect on the local and regional environment is likely to be **Temporary**, **Moderate** and **Negative**.

Operational Phase

Land Use

16.5.177 During the operational phase a permanent easement of 18m (9m either side) will be required for the pipeline to allow access for maintenance during operations of the development.

16.5.178 During the operational phase of the Gas Connection Corridor additional impacts to land use are not anticipated. The impact significance is assessed as **Neutral, Imperceptible** and **Long-term**.

Electricity Supply

16.5.179 There will be no requirement for electricity supply during the operational phase of the Gas Connection Corridor. The impact significance is assessed as **Neutral**, **Imperceptible** and **Permanent**.

Gas Supply

16.5.180 After the gas pipeline has been commissioned it will be operated and maintained by GNI in accordance with its established procedures to ensure its integrity and safe operation.

16.5.181 The new gas infrastructure will have a high sensitivity as this infrastructure will tie into the existing national network (high sensitivity) for a gas supply. The magnitude of impact will be **Significant** as there will be a major change in utilities required operational phase of the Gas Connection Corridor. As a result, the existing electricity network, the significance of impact without mitigation will be **Significant**, **Positive** and **Long-term** in duration.

Wastewater Services (Foul, Process and Surface Water)

16.5.182 No changes are proposed to the wastewater network as a result of the Gas Connection Corridor. Therefore, the impact significance is assessed as **Neutral** and **Imperceptible**.

Water Supply

16.5.183 No changes are proposed to the water supply network as a result of the Gas Connection Corridor. Therefore, the impact significance is assessed as **Neutral** and **Imperceptible**.

Telecommunications

16.5.184 No changes are proposed to the telecommunications network as a result of the Gas Connection Corridor. Therefore, the impact significance is assessed as **Neutral** and **Imperceptible**.

Waste and Resource Management

16.5.185 The Gas Connection Corridor will generate waste from maintenance works on an infrequent basis. Operational waste impacts are assessed as **Neutral** and **Imperceptible**.

Decommissioning Phase

16.5.186 The gas connection will be managed by the transmission asset operators (TAO) and transmission service operators (TSO) (GNI for gas) as part of the national gas networks.

16.6 Mitigation and Enhancement Measures

Power Plant Area

Construction Phase

Material Assets – Land Use and Utilities

16.6.1 Demolition and construction phase mitigation measures include avoidance, reduction, and remedy measures to reduce or eliminate any significant adverse impacts identified.

16.6.2 No mitigation or monitoring measures have been proposed for land use.

16.6.3 As good practice, an up-to-date utilities plan will be produced and submitted to the local authority prior to construction showing all utilities present on the existing Power Plant Area Site before construction begins.

16.6.4 An CEMP has been prepared and is presented within **Appendix 5A**, refer to Volume II. This will be finalised by the E&C Contractor prior to the start of construction.

16.6.5 The following mitigation measures will be implemented in order to reduce the likelihood of any impacts on utilities.

- As with any excavations there is a potential to disrupt local underground services. A confirmatory survey of all existing services will be carried out prior to construction and identify the precise locations of any services. The developer will liaise with the service provider where such services are identified. These will be mapped and communicated to all contractors working on the Power Plant Area.
- All utilities work shall be carried out in accordance with the relevant requirements of the respective service providers / authorities *(i.e.,* ESB, GNI, Eir, Virgin Media and any others of relevance). These works will be carried out in a manner that is safe, and which avoids or minimises interruptions of service which might affect local residents and businesses and adjacent development.
- Works during the construction phase, including service diversions and realignment will be carried out in accordance with relevant guidance documents, including GNI's publication '*Safety advice for working in the vicinity of natural gas pipelines*'; the ESB's '*Code of Practice for Avoiding Danger from Overhead Electricity Lines*', and the Health and Safety Authorities (HSA) '*Code of Practice for Avoiding Danger from Underground Services*'.
- All new infrastructure will be installed in accordance with the applicable standards, guidelines and codes of practice.
- The timing of local domestic connections will be addressed between the developer / Contractor and the local community at the detailed design stage.

Wastewater Services (Foul, Process and Surface Water)

16.6.6 Foul water during the construction phase will be collected and periodically removed from the Power Plant Area by road tanker to a licensed water treatment plant. As this control measure will be incorporated into the Site set-up, additional specific mitigation measures are therefore not required.

16.6.7 All utilities work shall be carried out in accordance with the relevant requirements of the respective service providers / authorities *(i.e.,* Irish Water). These works will be carried out in a manner that is safe, and which avoids or minimises interruptions of service which might affect local residents and businesses, and adjacent development.

16.6.8 Surface water mitigation measures are outlined in **Chapter 12** (Water Environment) and are not repeated here.

16.6.9 Refer to EIAR Chapter 5 and the CEMP (**Appendix 5A**) for details of managing water during the construction phase.

Waste and Resource Management

16.6.10 Segregation of waste will be carried on-site to maximise the potential for waste recycling and minimise any potential for impacts on waste services. A licensed waste collector will be used to remove any waste that does occur on-site.

16.6.11 The Contractor's C&D RWMP and CEMP will include design and construction measures that apply the waste hierarchy principles and minimise effects on waste. These include:

- Planning for the temporary on-site storage of soils, excavated materials and other materials to facilitate reuse.
- Reusing excavated materials within the construction of the Power Plant Area, where possible, to minimise the need to import and export material.
- Considering the importation to site of recycled aggregate material, as an alternative to primary aggregate, and establishing procedures to ensure it is uncontaminated.
- Establishing Key Performance Indicators (KPIs) for monitoring and reporting data on waste arising and diversion from landfill.

16.6.12 The RWMP will set out measures relating to waste management that would be implemented during construction of the Power Plant Area. Contractors will be required to develop the detailed RWMP in accordance with the EPA '*Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Waste Projects'*.

16.6.13 The Contractor will regularly review and update where required the assumptions on waste arisings and management and record and implement procedures for assessing, managing and recording waste arising on site. Opportunities for on-site and offsite reuse, recycling and recovery of excavated material and waste will be identified where feasible. Where required, an Article 27 by-product notification will be prepared and submitted for the necessary approvals prior to the commencement of construction works.

Operational Phase

Material Assets – Land Use and Utilities

16.6.14 Prior to the operational phase of the Power Plant Area, utilities infrastructure connections will be tested by a suitably qualified person using an appropriate methodology, approved by the relevant service provider, and under the supervision of the local authority. The Power Plant Area water supply will be tested to the satisfaction of the local authority and Irish Water prior to the connection to the public potable water.

16.6.15 Potable water during the operational phase will be regulated and monitored under the IE Licence.

16.6.16 Routine maintenance will be undertaken by the plant operators and contractors in accordance with maintenance manuals provided by the EPC Contractor.

16.6.17 The GT's will be subject to maintenance in accordance with the gas turbine manufacturers recommendations. The maintenance regime is generally based on annual, minor and major maintenance outages. The minor and major maintenance outage scheduling is based on the number of operating hours and starts the GT has undergone. Minor and Major outages replace annual outage in the year they take place. The outage periods may take between three days (Annual) and 17 days (Major) for the GT unit. These works are likely to take place during the summer months when the units

are least likely to be operated. During this maintenance period, maintenance on balance of plant will also be undertaken.

16.6.18 Emissions during the operational phase will be regulated and monitored under the IE Licence. There will be no requirement for additional mitigation measures during the operational phase.

Waste and Resource Management

16.6.19 The Environmental Management System (EMS) that will be developed and maintained for the Power Plant Area in operation, as required by the IE Licence, will include procedures for the management of waste and resources in accordance with relevant legislation. An operational Waste and Resource Management Plan will be developed as part of the EMS for the Power Plant Area.

16.6.20 There will be no requirement for additional mitigation measures during the operational phase.

Decommissioning Phase

16.6.21 At the end of its operating life, all above-ground equipment associated with the Power Plant Area will be decommissioned and removed from the Site. Prior to removing the plant and equipment, all residues and operating chemicals will be cleaned out from the plant and disposed of at a suitably licenced facility.

16.6.22 Prevention of contamination is a specific requirement of the IE Licence for the operation of the Power Plant Area and therefore the development has been designed such that it will not create any new areas of ground contamination or pathways to receptors as a result of construction or operation. Once the plant and equipment have been removed to ground level the hardstanding and sealed concrete areas will be left in place.

16.6.23 Site environmental liability risk assessment (ELRA) will be prepared for IE licence application for the Power Plant Area and reviewed in accordance with requirements as regards control of risk in the operational phase that may subsequently impact closure. Closure will typically include a requirement for any removal of soils, buildings, plant and equipment, and remedial actions would be undertaken under a Decommissioning Management Plan, part of a Closure, Restoration and Management Plan (CRAMP). Financial Provision for ELRA and CRAMP will be agreed with the EPA under the IE Licence.

16.6.24 During decommissioning and demolition there will be a requirement for office, accommodation and welfare facilities which will be located adjacent to the Power Plant Area. Decommissioning activities will be conducted in accordance with the appropriate guidance and legislation at the time of the Power Plant Area closure. The impacts associated with the decommissioning of the Power Plant Area are anticipated to be similar to the construction phase, although of a lesser degree, due to shorter duration and the fact that some elements will be left in situ such as roads and foundations.

Electricity Grid Connection

Construction Phase

Material Assets – Land Use and Utilities

16.6.25 The general mitigation measures for the Electricity Grid Connection are the same as those described for the Power Plant Area.

16.6.26 Any additional mitigation measures relevant to the Electricity Grid Connection are outlined below.

Wastewater Services (Foul, Process and Surface Water)

16.6.27 The final drainage design prepared for the Electricity Grid Connection prior to commencement of construction will have to provide for reactive management of drainage measures.

16.6.28 Refer to EIAR Chapter 5 and the CEMP (**Appendix 5A**) for details of managing water during the construction phase.

Waste and Resource Management

16.6.29 Segregation of waste will be carried on-site to maximise the potential for waste recycling and minimise any potential for impacts on waste services. A licensed waste collector will be used to remove any waste that does occur on-site.

16.6.30 The waste management mitigation measures during the construction phase of the Electricity Grid Connection are the same as those described for the Power Plant Area.

Operational Phase

Material Assets – Land Use and Utilities

16.6.31 There will be no requirement for additional mitigation measures during the operational phase.

16.6.32 However, routine maintenance will be carried out in accordance with the maintenance procedures.

16.6.33 220 kV Substation: The layout of electrical equipment in the substation will be designed to EirGrid specifications.

Waste and Resource Management

16.6.34 There will be no requirement for additional mitigation measures during the operational phase.

Decommissioning Phase

16.6.35 Decommissioning of the Electricity Grid Connection is not envisaged as it will be managed by EirGrid once it is operational and will become an important part of Ireland's national grid infrastructure. Therefore, no mitigation measures are proposed.

Gas Connection Corridor

Construction Phase

Material Assets – Land Use and Utilities

16.6.36 The general mitigation measures for the Gas Connection Corridor are the same as those described for the Power Plant Area. Any additional mitigation measures relevant to the Gas Connection Corridor are outlined below.

Waste and Resource Management

16.6.37 The waste management mitigation measure for the Gas Connection Corridor are the same as those described for the Power Plant Area.

Operational Phase

Material Assets

16.6.38 After the gas pipeline has been commissioned it will be operated and maintained by GNI in accordance with its established procedures to ensure its integrity and safe operation.

16.6.39 There will be no requirement for additional mitigation measures during the operational phase.

Waste and Resource Management

16.6.40 There will be no requirement for additional mitigation measures during the operational phase.

Decommissioning Phase

16.6.41 Decommissioning of the Gas Connection Corridor is not envisaged as it will be managed by GNI and will become an important part of Ireland's gas network infrastructure. Therefore, no mitigation measures are proposed.

16.7 Residual Effects

Power Plant Area

Construction Phase

Material Assets – Land Use and Utilities

16.7.1 Should any underground services located along with the Site or at the locations of the proposed temporary road works to accommodate deliveries, the above-mentioned mitigation measures (relating to avoidance of or careful excavations near underground services) will be used to reduce any potential for impacts to being **Unlikely**, **Brief**, **Slight** and **Negative**.

Waste and Resource Management

16.7.2 The implementation of the mitigation measures outlined in this chapter and the EIAR will ensure that high rates of reuse, recovery and recycling are achieved at the Site of the Power Plant Area during the demolition and construction phases. Following the implementation of the mitigation, there will be an **Imperceptible**, **Short-term**, **Negative** impact on waste services.

Operational Phase

Material Assets – Land Use and Utilities

16.7.3 The implementation of the mitigation measures outlined in this chapter and the EIAR will ensure that mobile and wireless communications links to the north of the Power Plant are restored.

16.7.4 Following the implementation of the mitigation, there will be an Imperceptible, Short-term, Negative impact on telecoms.

16.7.5 All other material assets after mitigation will have an **Imperceptible**, **Long-term** and **Positive** residual effect once mitigation measures are taken into account.

Waste and Resource Management

16.7.6 The implementation of the mitigation measures outlined in this chapter and the EIAR will ensure that high rates of reuse, recovery and recycling are achieved at the Site of the Power Plant Area during the operational phase. There will be a potential **Imperceptible**, **Long-term, Neutral** impact on waste services during the operational phase.

Decommissioning Phase

16.7.7 Residual effects to land use for decommissioning will be **Imperceptible.** There are no anticipated effects to utilities and services in the area.

Electricity Grid Connection

Construction Phase

Material Assets – Land Use and Utilities

16.7.8 Following implementation of the mitigation measures as outlined above, the residual effects following the implementation of mitigation measures are therefore considered to be **Not Significant**, **Negative** and **Short-term**.

Waste and Resource Management

16.7.9 Following implementation of the mitigation measures as outlined above most waste materials generated during the construction phase will be re-used or will be sent for recovery / recycling at authorised waste facilities.

16.7.10 The residual effects following the implementation of mitigation measures are therefore considered to be **Not Significant**, **Negative** and **Short-term**.

Operational Phase

Material Assets – Land Use and Utilities

16.7.11 Following implementation of the mitigation measures as outlined above, the residual effects following the implementation of mitigation measures are therefore considered to be **Not Significant**, **Negative** and **Short-term**.

Waste and Resource Management

16.7.12 The waste generated during operation and maintenance of the Electricity Grid Connection will not be significant as it will mainly be associated with occasional maintenance works. The residual effect on resource and waste management is expected to be **Negligible**.

Decommissioning Phase

16.7.13 Decommissioning of the Electricity Grid Connection is not envisaged and has not been assessed under this EIAR as it will be managed by EirGrid once it is operational and will become an important part of Ireland's national grid infrastructure.

16.7.14 When the Electricity Grid Connection will be decommissioned depends on the asset owner's operational requirement and asset management policy.

Gas Connection Corridor

Construction Phase

Material Assets – Land Use and Utilities

16.7.15 Following implementation of the mitigation measures as outlined above, the residual effects following the implementation of mitigation measures are therefore considered to be **Not Significant**, **Negative** and **Short-term**.

Waste and Resource Management

16.7.16 Following implementation of the mitigation measures as outlined above most waste materials generated during the construction phase will be re-used or will be sent for recovery / recycling at authorised waste facilities.

16.7.17 The residual effects following the implementation of mitigation measures are therefore considered to be **Not Significant**, **Negative** and **Short-term**.

Operational Phase

Material Assets – Land Use and Utilities

16.7.18 Following implementation of the mitigation measures as outlined above, the residual effects following the implementation of mitigation measures are therefore considered to be **Not Significant**, **Negative** and **Short-term**.

Waste and Resource Management

16.7.19 The waste generated during operation and maintenance of the Gas Connection Corridor will not be significant as it will mainly be associated with occasional maintenance works. The residual effect on resource and waste management is expected to be **Negligible**.

Decommissioning Phase

16.7.20 Decommissioning of the Gas Connection Corridor is not envisaged and has not been assessed under this EIAR as it will be managed by GNI and will become an important part of Ireland's gas network infrastructure.

16.8 Cumulative Effects

Cumulative Effects between the Various Elements of the Proposed Development and Overall Project

16.8.1 The potential cumulative impacts from interactions between various elements of the Proposed Development and Overall Project, as described in **Chapter 5**, have been considered in terms of impacts on the Material Assets and Waste and Resource Management. Due to the proximity, scale, and timelines associated with each element, there is potential for cumulative effects with the Proposed Development and Overall Project.

16.8.2 This impact assessment has considered all elements of the Proposed Development and Overall Project, including elements which are not subject to this planning permission, during the construction, operation and decommissioning phases. A cumulative impact assessment has therefore been carried out throughout this chapter to examine the impacts that the various elements of the Overall Project will have on the Material Assets and Waste and Resource Management.

Power Plant Area

Material Assets – Land Use and Utilities

16.8.3 The Power Plant Area and Electricity Grid Connection are part of this application while a separate consent application for the Gas Connection Corridor will be made by GNI under Section 39A of the Gas Act. The Gas Connection Corridor and Electricity Grid Connection elements of the Overall Project are integral to the operation of the Power Plant Area. Therefore, there is potential for overlapping construction phases of each element of the Overall Project (*i.e*., Electricity Grid Connection, Gas Connection Corridor and Power Plant Area) creating cumulative Material Assets and Waste and Resource Management impacts.

16.8.4 However, with the implementation of the mitigation, residual effects for the Power Plant Area during the construction, operational and decommissioning phases are considered to be **Imperceptible** or **Not significant**.

16.8.5 No cumulative effects during the operation of the Power Plant Area are anticipated from the operation of the Electricity Grid Connection or the Gas Connection Corridor given the nature of these elements.

Waste and Resource Management

16.8.6 The other elements of the Proposed Development and Overall Project have the potential to create varying volumes of waste from a number of waste categories, depending on the project. The quantities of these wastes are not anticipated to be large. Overall, there will be **No Significant** cumulative impact on waste services.

Electricity Grid Connection

Material Assets – Land Use and Utilities

16.8.7 The Electricity Grid Connection is part of this application with the Power Plant Area application, while a separate consent application for the Gas Connection Corridor will be made by GNI under Section 39A of the Gas Act. These are all part of the Overall Project and are all integral for the overall operation. Therefore, there is potential for overlapping construction phases of each element of the Overall Project (*i.e*., Electricity Grid Connection, Gas Connection Corridor and Power Plant Area) creating cumulative Material Assets and Waste and Resource Management impacts.

16.8.8 However, with the implementation of the mitigation, residual effects for the Electricity Grid Connection during the construction, operational and decommissioning phases are considered to be **Imperceptible** or **Not significant**.

16.8.9 No cumulative effects during the operation of the Electricity Grid Connection are anticipated from the operation of the Power Plant Area or the Gas Connection Corridor given the nature of these elements.

Waste and Resource Management

16.8.10 The other elements of the Proposed Development and Overall Project have the potential to create varying volumes of waste from a number of waste categories, depending on the project. The quantities of these wastes are not anticipated to be large. Overall, there will be **No Significant** cumulative impact on waste services.

Gas Connection Corridor

Material Assets – Land Use and Utilities

16.8.11 The Gas Connection Corridor will be subject to separate consenting applications which will be made by GNI. However, the Gas Connection Corridor has been considered part of the Overall Project as it is integral to the operation of the Proposed Development. Therefore, there is potential for overlapping construction phases of each element of the Overall Project (*i.e.*, Electricity Grid Connection, Gas Connection Corridor and Power Plant Area) creating cumulative Material Assets and Waste and Resource Management impacts.

16.8.12 However, with the implementation of the mitigation, residual effects for the Gas Connection Corridor during the construction, operational and decommissioning phases are considered to be **Imperceptible** or **Not Significant**.

16.8.13 No cumulative effects during the operation of the Gas Connection Corridor are anticipated from the operation of the Power Plant Area or the Electricity Grid Connection given the nature of these elements.

Waste and Resource Management

16.8.14 The other elements of the Proposed Development and Overall Project have the potential to create varying volumes of waste from a number of waste categories, depending on the project. The quantities of these wastes are not anticipated to be large. Overall, there will be **No Significant** cumulative impact on waste services.

Cumulative Effects

16.8.15 The potential cumulative effects of the Proposed Development and Overall Project in combination with the other projects described in **Chapter 1** of this report have been considered in terms of impacts on Material Assets and Waste and Resource Management. There are a number of proposed or permitted housing developments within the vicinity of the Proposed Development and Overall Project. A description of the developments is provided in **Chapter 4**, and where appropriate the application documentation, EIAR and NIS. Further information on the above is provided in **Table 4.1** in of Chapter 4.

16.8.16 A full list of planning applications obtained from the search is presented in **Appendix 19A** (refer to Volume II). Applications in relation to smaller planning applications predominantly for extensions or alterations to existing dwellings are not considered to be relevant to the cumulative assessment within this EIAR, given their small scale. Therefore, only projects of sufficient size and scale that may potentially act in-combination with the Proposed Development and Overall Project and are assessed herein.

16.8.17 As noted above, potential disruptions to existing utilities will be **Not Significant, Slight** or **Moderate**. It is not unreasonable to assume that the committed developments listed in **Appendix 19A**, which have also gone through the planning process, will also implement standard and best practice mitigation measures to the extent that impacts are not significant. Providing standard best practice control measures are implemented as required on all sites, the cumulative impact will be **Not Significant**.

16.8.18 Other projects considered (refer to **Appendix 19A**) have the potential to create varying volumes of waste from a number of waste categories, depending on the project. The quantities of these wastes are not anticipated to be large. Overall, there will be **No Significant** cumulative impact on waste services.

16.8.19 The scale and location of each of the projects listed have been considered cumulatively with each other and the construction and operation of the Proposed Development. Any impacts arising would not cause significant effects to any Material Assets and Waste and Resource Management receptors over those already identified and considered in each assessment.

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