

Shannon Technology and Energy Park (STEP) Power Plant

Environmental Impact Assessment

Chapter 19 Schedule of Environmental Commitments

Shannon LNG Limited

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19. Schedule of Environmental Commitments

19.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) provides a summary of the Schedule of Environmental Commitments (mitigation measures) for the Proposed Development.

The following environmental mitigation and monitoring will avoid, reduce, or offset the effects of any significant and adverse environmental impacts identified, and are an integral element of the planning application. Any further design of the Proposed Development will ensure that there is no material change in terms of significant adverse effects on the environment. Opportunities may also be identified to further reduce the significance of adverse impact and, in some cases, improve the residual impact.

Best practice referred to in this chapter refer to measures contained in guidance documents which set out the practice and procedures for environmental protection during construction and operational phases of a development. Where legislation, standards or guidance documents are referred to it should be noted that at the time of construction or operation of the Proposed Development any amendments to these documents are applicable.

Embedded mitigation measures have been incorporated into the design of the Proposed Development throughout the design process. The environmental impact assessment of the Proposed Development facilitated the identification of additional mitigation and monitoring measures. The mitigation and monitoring measures identified within **Chapters 05 to 17** of this EIAR are summarised and presented in **Table 19.1**. The table also provides measures to be applied and / or any anticipated residual impacts. This chapter should be read in conjunction with the individual chapters of this EIAR as the information contained herein is a summary only.

The embedded environmental controls and all mitigation and monitoring measures detailed herein are included in the Construction Environmental Management Plan (CEMP), refer to **Appendix A2.3**, Volume 4. A Contractor's CEMP will be produced by the Contractor prior to the main construction works. The CEMP will detail the Contractor's overall management and administration of the works. The CEMP will also include any commitments included within the statutory approvals.

In addition to the mitigation and monitoring measures outlined in **Table 19.1**, the following combination of general measures and good practice will be implemented:

- The CEMP is designed to minimise any perturbations caused during the construction and is designed to meet best practice guidance and latest legislation. Specific roles, such as the Environmental (Ecological) Clerk of Works (ECoW), will be designated in the CEMP. The CEMP will be updated a minimum of every six months over the duration of the construction process.
- The Site compound will be located away from watercourses and the storage of all fuels and potential contaminants on-site will be done so in adherence to the mitigation measures outlined within this EIAR.
- Pedestrian access to the foreshore will be maintained throughout the construction period.

- During construction, the excavation and grading of all areas will be carried out in a sensitive manner to marry in the new formations with the existing landscape. Sharp ridges or overly steep embankments will be avoided where possible.
- Periodic water quality monitoring will be carried out at points of supply.
- Some of the units for the Power Plant could be 'extra-large loads' / abnormal indivisible load and a Garda escort may be required when they are on the road network. The timing of their transport to the Site will be chosen to minimise disruption to other roads users. This will be managed in accordance with the Construction Traffic Management Plan (CTMP) and the Abnormal Indivisible Load (AIL) Assessment, refer to **Appendix A11.1** and **A11.2**, respectively, Volume 4.
- The Contractor will be obliged to put measures in place during the construction phase to ensure that there are no interruptions to existing services. When service suspensions are required during the construction phase, reasonable prior notice will be given to the residents in the area. The disruption to services or outages will be carefully planned so the duration is minimised.
- The CEMP will set out information on the roles and responsibilities of key individuals, including the environmental management and reporting structure.
- An outline communication strategy, making recommendations to the contractors, for example such as the implementation of toolbox talks (environmental discussion on issues encountered onsite) by the Contractor relating to environmental constraints and procedures to be adhered to onsite.
- An outline emergency response plan and procedure for environmental incidents including accidental spills.
- An outline reporting programme and procedure to be updated by the Contractor.
- Landscape will be reinstated in accordance with a landscape reinstatement plan.
- The Contractor will prepare a landscape maintenance plan after the implementation of the Proposed Development. All landscape works will be in an establishment phase for the initial three years. This will include:
 - (a) Weed and litter control including monitoring particularly during the early growing seasons of the landscape maintenance contract.
 - (b) Grass cutting and replacement of failed plants.
 - (c) Compliance with all health and safety standards in particular with regard to maintenance works during the operation phase of the road.
- The Proposed Development will comply with the requirements of the Industrial Emissions (IE) licence, required during operation.

19.2 Guidance

Works will be undertaken in accordance with the following environmental management technical guidance documents:

- Construction Industry Research and Information Association (CIRIA) (2001). *Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (C532)*.
- CIRIA (2006). *Control of water pollution from linear construction projects. Technical guidance (C648)*.
- CIRIA (2023). *Environmental Good Practice on site pocketbook (C811)*.
- EPA (2021). *Best Practice Guidelines for The Preparation of Resource Management Plans for Construction & Demolition Projects*.

Table 19.1: Summary of the Schedule of Environmental Commitments

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
C_GEN_01	Construction	All	Chapter 02	<ul style="list-style-type: none"> A construction management team will be onsite for the duration of the construction. This team will supervise the construction of the Proposed Development, including monitoring the Contractors performance to ensure that the proposed construction phase mitigation and monitoring measures are implemented, and that construction impacts and nuisance are minimised.
C_GEN_02	Construction	All	Chapter 02	<ul style="list-style-type: none"> Kerry Co. Co. will be notified of the identified point of contact onsite for the duration of the construction phase.
C_GEN_03	Construction	All Programme / Hours	Chapter 02	<ul style="list-style-type: none"> Construction phase works will take place between the hours of 07:30 to 18:00 (Monday to Friday) and 08:00 to 14:00 (Saturday). No works will take place on Sundays or Bank Holidays. Construction works outside these hours will only take place in exceptional circumstances (<i>i.e.</i>, for specific engineering works e.g., concrete pours etc.). It is likely that a number of continuous construction phase works will also be required outside these hours on a limited number of occasions. These works will be agreed in advance with Kerry Co. Co. Work conducted outside of core hours, will comply with any restrictions agreed with the planning authorities, in particular regarding the control of noise and traffic.
C_GEN_04	Construction	All Construction Compound	Chapter 02	<ul style="list-style-type: none"> The proposed location of the construction compound will be entirely within the Site of the Proposed Development. The locations and extent of the construction compound are presented in Figure F2.2, Volume 3. The construction compound will be secured with temporary fencing and will accommodate employee parking, canteens, offices, medical, changing, and welfare facilities, drying rooms and temporary services on the Site. The construction compound will not be for long-term storage of materials, and storage but will be for the duration of the construction phase only. Foul water from welfare facilities during the construction phase will be collected and periodically removed from the Site by road tanker. For the duration of the construction phase, mobile plant will be returned to a secure overnight plant storage area on the Site, at the end of each shift. Drip trays will be utilised under the various types of plant. Storage areas will be provided for flammable / toxic / corrosive materials, in a separate location that will be locked, impermeable bunded and fenced off. Material data sheets will be used for all these materials. Parking will be available onsite for all construction staff vehicles within the construction compound.
C_GEN_05	Construction	All Site Access	Chapter 02	<ul style="list-style-type: none"> Construction traffic will access and egress the Site via a new priority junction and right turn pocket along the upgraded L1010 road. This new vehicular entrance will serve all traffic arriving to the Site. The Contractor will begin by setting out the Site entrance as early as possible in the programme consistent with seasonal environmental restrictions and constraints. This operation will begin with the clearance of existing hedgerows and vegetation at the Site entrance on the L1010 road and progress along the route of the access road to the construction laydown area. This will be followed closely by the excavation of vegetation and topsoil for the access road which follows the existing ground levels and then the placement of crushed stone (to create a 6 m wide access road) to create an initial access and roadway to the construction laydown. All Heavy Goods Vehicle (HGV) construction traffic will only be allowed to travel from the N69 / N67, through Tarbert town and along the upgraded L1010 road to the Site. No HGV traffic will be permitted to travel / from the Ballylongford Village direction to the Site or along the R551. Refer to Chapter 11 (Traffic and Transport) and the Construction Traffic Management Plan (CTMP), Appendix A11.1, and Section 2.7.2.3 for further details on the Site access establishment.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Access to the Site will be security controlled and all Site visitors will be required to sign in on arrival and sign out on departure. There will be security fencing around the construction compound and specific areas of the Site for access control, safety and security.
C_GEN_06	Construction	All Access	Chapter 02	<ul style="list-style-type: none"> Pedestrian access to the foreshore will be maintained throughout the construction period.
C_GEN_07	Construction	All Fencing	Chapter 02	<ul style="list-style-type: none"> Fencing will be erected along the perimeter of the Site as early as possible. Particular care will be taken at the boundary between the Site and the SAC, SPA and pNHA so that construction activities do not cause damage to habitats in this area. These habitats will be securely fenced off early in the construction phase. The fencing will be clearly visible to machine operators and include relevant areas in which works are planned, such as utilities. Fencing will be installed to protect the Ralappane stream. To prevent incidental damage by machinery or by the deposition of spoil during site works, hedgerow, tree and scrub vegetation which are located in close proximity to working areas will be clearly marked and fenced off to avoid accidental damage during excavations and site preparation.
C_GEN_08	Construction	All CEMP	Chapter 02	<ul style="list-style-type: none"> The CEMP is designed to minimise any perturbations caused during the construction and is designed to meet best practice guidance and latest legislation. Specific roles, such as the Environmental (Ecological) Clerk of Works (ECOW), will be designated in the CEMP. The CEMP will be updated a minimum of every six months over the duration of the construction process. The CEMP will set out information on the roles and responsibilities of key individuals, including the environmental management and reporting structure. A Contractor's CEMP will be produced by the appointed Contractor prior to the main construction works. The CEMP will detail the Contractor's overall management and administration of the works. The CEMP will also include any commitments included within the statutory approvals. <p>The CEMP will set out the necessary approach to managing the environmental aspects and impacts associated with the construction of the Proposed Development. It will also contain details of the monitoring and reporting system which will be implemented to document compliance with the following:</p> <ul style="list-style-type: none"> Environmental commitments identified in the environmental assessment. The conditions of the relevant statutory consents including the planning consent and the foreshore licence associated with the Proposed Development. <p>The Contractor will be required to include the following information:</p> <ul style="list-style-type: none"> Project details and the scope of works (including the locations of construction compounds and information on construction periods and phasing). A summary of relevant policy and project and environmental aims and objectives. The planning and currently approved foreshore licence conditions relevant to the construction activities and a summary of how and where they will be addressed within the CEMP. Information on the roles and responsibilities of key individuals, including the environmental management and reporting structure (as provided by the Contractor or as available at the time of writing the CEMP). An outline communication strategy, making recommendations to the contractors, for example such as the implementation of toolbox talks (environmental discussion on issues encountered onsite) by the Contractor relating to environmental constraints and procedures to be adhered to onsite.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> • Methods to identify non-conformances, details of non-conformances and breaches of environmental limits and reporting measures. • A summary of the potential environmental effects as identified by the EIA, the schedule of mitigation and other existing documentation. • The schedule of identified potential environmental impacts, risks and mitigation and monitoring measures. • Method statements and work programmes for specific tasks such as the management of concrete washout onsite. • Requirements for and maintenance of concrete washout areas. • Requirements for fencing off of any protected environmental sites such as areas of ecological or archaeological importance. • Protection of vegetation including hedgerows and trees etc. • An environmental monitoring programme and details of monitoring locations as required. • An outline emergency response plan and procedure for environmental incidents including accidental spills. • Requirements for inspection and auditing. • An outline reporting programme and procedure to be updated by the Contractor. <p>The CEMP will be treated as a 'live document' and periodically reviewed and updated as required during the course of construction. As a minimum, the CEMP will be reviewed every six months. Notwithstanding the above requirements, the CEMP will also be reviewed at least two weeks prior to the construction phases listed below:</p> <ul style="list-style-type: none"> • Start of works. • Start of each succeeding stage of the works. • Start of any site activity that may potentially have an effect on sensitive habitats / species. • Start of the landscaping works.
C_GEN_09	Construction	Traffic	Chapter 02	<ul style="list-style-type: none"> • Construction signage will be provided for the Site. Signage at the Site entrance will be provided to outline details of the project and will include a contact telephone number for the public. • Construction phase traffic will be managed such that the impact on public roads will be minimised. This will be achieved by the implementation of the CTMP which will be agreed by Kerry Co. Co. in advance of the works.
C_GEN_10	Construction	Traffic - Abnormal Indivisible Load	Chapter 02	<ul style="list-style-type: none"> • Some of the units for the Power Plant could be 'extra-large loads' / abnormal indivisible load (AIL) and a Garda escort may be required when they are on the road network. The timing of their transport to the Site will be chosen to minimise disruption to other roads users. • This will be managed in accordance with the CTMP and the Abnormal Indivisible Load (AIL) Assessment, refer to Appendix A11.1 and A11.2, respectively, Volume 4.
C_GEN_11	Construction	Biodiversity Pre-Construction Surveys	Chapter 02	<ul style="list-style-type: none"> • Pre-construction environmental surveys will be undertaken in advance of the enabling works. • Following the surveys, licences will be sought from the National Parks and Wildlife Service (NPWS), as appropriate. • Exclusion works will be carried out in the appropriate season in line with the information presented in Chapter 07B (Terrestrial Ecology). • Prior to the start of works onsite areas to be protected (such as ecologically sensitive habitats or notable trees) will be fenced off to protect from accidental damage. Some hedgerows, bushes and trees, and disused buildings, will also be removed during this phase. It is noted that the seasonality of some of the activities is likely to be limited, for example, by seasonal environmental

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				ecological restrictions and constraints (e.g. bird nesting season), and / or by restrictions on when soils can be placed. Where this is the case, the overall programme will be adapted to limit or prevent the risk of impacts in accordance with the CEMP.
C_GEN_12	Construction	Pre-Earthworks Drainage	Chapter 02	<ul style="list-style-type: none"> To prevent the risk of contaminating surface water and groundwater, temporary surface water drainage (including dewatering measures) and silt ponds will be constructed to control runoff from the earthworks stage. This will flow through a filtration system (such as hay bales) to slow down flow to an acceptable level. Silt traps will be placed at crossing points to avoid siltation of watercourses. Attention will be paid to preventing the build-up of dirt on road surfaces, caused by lorries and other plant entering and exiting the Site, via wheel washes and road sweepers as required. The layout of the temporary surface water drainage system will incorporate the mitigation and monitoring measures outlined in this EIA and conform to the requirements of the CEMP, RWMP, CTMP, Natura Impact Statement (NIS) and planning conditions. Rainwater runoff will be diverted away from the construction areas into the Shannon Estuary. Rainwater runoff will pass through an attenuation system including ponds with straw bales or silt bags to prevent sediment from entering the estuary. Discharge water quality targets will be agreed with Kerry Co. Co. and included in the CEMP. Regular water inspection and sampling regimes will be put in place via the CEMP on the foreshore during construction activity onsite to monitor compliance with the discharge conditions.
C_GEN_13	Construction	Earthworks	Chapter 02	<ul style="list-style-type: none"> Some of the rock will need to be broken up before it can be excavated. This will be done either by percussive rock breaking equipment mounted on tracked excavators or by blasting depending on the hardness and depth of the rock to be removed. The soil and rock will then be excavated using tracked excavators. Excavated material will be stockpiled for use as engineering fill, landscaping and other uses throughout the Site. Stockpiles will be no more than 2 - 3 m high and will be seeded with an appropriate seed mix. All excavated material will be reused onsite within the Site.
C_GEN_14	Construction	Water	Chapter 02	<ul style="list-style-type: none"> The Site compound will be located away from watercourses and the storage of all fuels and potential contaminants on-site will be done so in adherence to the mitigation measures outlined within this EIA. Periodic water quality monitoring will be carried out at points of supply.
C_GEN_15	Construction	Soil	Chapter 02	<ul style="list-style-type: none"> During construction, the excavation and grading of all areas will be carried out in a sensitive manner to marry in the new formations with the existing landscape. Sharp ridges or overly steep embankments will be avoided where possible.
C_GEN_16	Construction	Utilities	Chapter 02	<ul style="list-style-type: none"> The Contractor will be obliged to put measures in place during the construction phase to ensure that there are no interruptions to existing services. When service suspensions are required during the construction phase, reasonable prior notice will be given to the residents in the area. The disruption to services or outages will be carefully planned so the duration is minimised.
C_GEN_17	Construction	Construction Materials	Chapter 02	<ul style="list-style-type: none"> Construction materials will be sourced locally from authorised quarries, where possible to minimise the environmental impact of transportation. It is intended that this will include all suitable stone recovered on during the enabling works will be reused as hardcore. For this purpose, rock crushing and screening plant will be provided. Additional rock, stone and sand materials could be procured from local quarries as required including the following:

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> • Ardferd Quarries, Ardferd, Co. Kerry. • O' Mahoney Quarries, Tralee, Co. Kerry. • Roadstone, Foynes, Co. Limerick. • Liam Lynch, Adare, Co. Limerick. • All the materials will be transported to the Site by road. It is anticipated that up to 26,000 tonnes of imported aggregates will be required for the Proposed Development. • There may be periods in the early stages of construction where onsite haul roads are not surfaced. • To reduce dust these routes can be dampened down (including the reuse of water from the wheel washing facilities) and maximum speed limits will be signposted and imposed. • Some of the process equipment and structural elements will arrive onsite as complete units or sub-assemblies, which may be larger than normal construction loads. It is anticipated that all the units will be delivered by ship to Foynes, and from there transported to the Site by road. • Some of the units could be 'extra-large loads' / abnormal indivisible load (AIL) and a Garda escort may be required when they are on the road network. The timing of their transport to the Site will be chosen to minimise disruption to other roads users.
C_GEN_18	Construction	Waste Management	Chapter 02	<ul style="list-style-type: none"> • During the construction phase, the Proposed Development will generate a range of non-hazardous and hazardous waste (e.g., oils and chemicals) materials during construction. • Waste materials will be required to be temporarily stored onsite pending collection by a waste contractor. • The Contractor will endeavour to ensure that material is reused or recovered offsite insofar as is reasonably practicable or disposed of at authorised facility. • The Contractor will be required to develop a detailed Resource and Waste Management Plan (RWMP) that complies with the EPA (2021) 'Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Waste Projects'. • 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 onsite. • Chapter 16 (Waste Management) for further information regarding waste management.
O_GEN_01	Operational	Industrial Emissions Licence	Chapter 02	<ul style="list-style-type: none"> • In the operational phase, the Proposed Development will comply with the requirements of the <i>EU (Large Combustion Plants) Regulations 2012, S.I. No. 566 of 2012</i>, under an IE licence. • The emissions which have the potential to impact to air, soil, surface water and groundwater and human health, will be mitigated against and avoided where possible. • An IE Licence is required for operation of the Proposed Development in accordance with Activity 2.1 of the First Schedule of the EPA Act as amended 'Combustion of fuels in installations with a total rated thermal input of 50 MW or more'. • An Environment Management System (EMS) which will be implemented by the operator and will set out the requirements and procedures required to ensure that the Proposed Development is operating to appropriate standards. • The EMS will be certified to International Standards Organisation (ISO) 14001. • Environmental monitoring (including analysis of pollutants) will be carried out, where required, including monitoring of exhaust emissions levels using Continuous Emission Monitoring Systems (CEMS) prior to discharge from the flue gas emissions stacks, in accordance with the IE Licence.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
O_GEN_02	Operational	Site Management	Chapter 02	<ul style="list-style-type: none"> The Proposed Development will be manned and operational 24 hours, seven days a week outside of outages. During the operational phase, the Proposed Development will be operated, maintained and managed by the Applicant.
O_GEN_03	Operational	Training	Chapter 02	<ul style="list-style-type: none"> The Proposed Development, through its training regime, will ensure every employee is aware of their responsibility to work safely, adhere to safety rules and work procedures, use safety equipment provided, is environmentally responsible, and play an active role in the Proposed Development's drive for continual improvement in health, safety and environmental (HSE) performance. Pre-operational training and regular refresher courses, using simulators, will be undertaken, involving all relevant parties, including Kerry Co. Co.'s Fire Department and the employees.
O_GEN_04	Operational	Emergency Planning	Chapter 02	<p>Measures to prevent the risk of fires, spillages, floods and other major incidents will be embedded in the design of the Proposed Development. Measures to prevent potentially major incidents include:</p> <ul style="list-style-type: none"> Hazardous and polluting liquids such as diesel fuel and transformer oils will be stored in tanks located in bunds. Diesel fuel unloading bay will be designed to contain spillages. Storage tank level indicators and oil detection sensors in bunds will be provided with alarms. Class 1 full retention Oil Water Separator will be provided in the surface water drainage system. Measures to isolate the surface water drainage system will be provided to prevent discharge of contaminated water. <p>The Applicant will ensure that operating, maintenance, and emergency response procedures and manuals will be subject to regular review and will be updated to reflect best industry practice, or to reflect the addition of new procedures, equipment or other facilities. Operational procedures will be in place that will clearly outline responsibilities and the appropriate communication channels for operational staff / site personnel.</p> <p>Operational measures will be included in the Environmental Management System (EMS) and regulated by EPA through the IE licence</p>
D_GEN_01	Decommissioning	Decommissioning activities	Chapter 02	<p>The Proposed Development is expected to have a design life of 25 years, but this could be extended by maintenance, equipment replacement and upgrades or by the transition of the Site to use hydrogen capability (which will be subject to a future planning application). It is expected that it would be a condition of the IE licence for the Proposed Development that a closure and residuals management plan, including a detailed decommissioning plan, be submitted to the EPA for their approval.</p> <p>Decommissioning activities will include, as a minimum:</p> <ul style="list-style-type: none"> All wastes at the facility at time of closure will be collected and recycled or disposed of by an authorised waste contractor, as appropriate. Utilities will be drained of all potential pollutants such as lubricating oils or sealed to prevent leakage if being moved offsite or reused elsewhere. All raw materials, oils, fuels, etc. onsite at the time of closure will be returned to the supplier, or collected and recycled or disposed of by an authorised waste contractor, as appropriate. All buildings and equipment will be decontaminated, decommissioned and demolished in accordance with a phased demolition plan, and either sold for reuse or recycled, or disposed of by an authorised waste contractor, as appropriate. In general, specialist equipment, pipelines and storage tanks will be sold for reuse, where possible, or disposed of offsite. Roadways to be broken up and removed and security fences dismantled. All hazardous and non-hazardous process substances to be removed.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> All roads and hardstanding areas to be removed and recycled or disposed of by an authorised waste contractor, as appropriate. Landscaped will be reinstated in accordance with a landscape reinstatement plan. On completion of safe decommissioning of equipment, the potable water, fire water and electrical power supplies could be disconnected, and removed or abandoned in place. <p>When operations at the Proposed Development have ceased, and assuming confirmation from the monitoring programme that all emissions have ceased, it is expected that there would be no requirement for long-term aftercare management at the Site of the Proposed Development.</p> <p>The AGI will be managed as part of the national gas networks. At the end of its design life, it is expected that the gas connection 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.</p>
C_LSG_01	Construction	Land, Soils & Geology Embedded Mitigation	Chapter 05	<ul style="list-style-type: none"> Routing of road runoff from the approach road north-ward to the Proposed Development, rather than to natural drainage leading west to the Ralappane Stream. Separation of sealed road drainage from other forms of stormwater drainage. Provision of an attenuation system, including a Class 1 interceptor fitted with control valves. Provision of a firewater impoundment basin. Provision of tertiary containment and designated bunded storage facilities for potentially-contaminating chemicals and fuels.
C_LSG_02	Construction	Land, Soils & Geology Resource Waste Management Plan Surface Water Management Plan	Chapter 05	<ul style="list-style-type: none"> A Resource Waste Management Plan (RWMP) and Surface Water Management Plan will be prepared and any construction-related requirements imposed as conditions of any planning permission granted. It will also include details of proposed environmental monitoring for the duration of the construction works, be this good practice or as a planning condition requirement.
C_LSG_03	Construction	Land, Soils & Geology Surface Water Drainage	Chapter 05	<ul style="list-style-type: none"> Temporary surface water drainage (including dewatering measures) and silt ponds will be constructed to control runoff from the earthworks stage.
C_LSG_04	Construction	Land, Soils & Geology Soil / Fill	Chapter 05	<ul style="list-style-type: none"> Soils, pile arisings and crushed rock will be tested for their chemical and geotechnical suitability prior to use as fill. Fill placement and compaction will be undertaken in line with defined procedures and will be inspected by a geotechnical engineer.
C_LSG_05	Construction	Land, Soils & Geology Geotechnical Design	Chapter 05	<ul style="list-style-type: none"> Prior to commencement of the Proposed Development, site investigation results will be used to inform the geotechnical design. Foundation solutions will be designed based on the properties of the underlying soils and bedrock, appropriate methodologies will be selected for the excavation of bedrock and foundation design will be finalised. Where necessary and in accordance with industry best practise, further detailed site investigation will be undertaken to provide design parameters for the Proposed Development.
C_LSG_6	Construction	Land, Soils & Geology Storage of Soil	Chapter 05	<ul style="list-style-type: none"> Temporary storage of soil and stone will be carefully managed in such a way as to prevent potential negative impact on the receiving environment.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
		Water	Chapter 06	<ul style="list-style-type: none"> Spoil and temporary stockpiles, including stone stockpile areas, will be positioned in locations which are distant from the shoreline, drainage systems and retained drainage channels and away from areas subject to flooding, so as not to cause potential runoff to soils and surface waters.
C_LSG_07	Construction	Land and Soils Soil	Chapter 05	<ul style="list-style-type: none"> Store excavated topsoil and rock for reuse in graded stockpiles less than 2 m high to prevent damage to the soil structure. Other excavated materials of lower engineering quality can be stored in higher piles. The depth of topsoil removal across the site is expected to be 0.15 m and, in total, 35,000 m³ of topsoil is expected to be removed, stockpiled and reused on site during the proposed development works.
C_LSG_08	Construction	Land, Soils & Geology Soil	Chapter 05	<ul style="list-style-type: none"> Of this 35,000 m³ of topsoil, 13,745 m³ is expected to be used as backfill and the remaining 21,255 m³ will be used to cover the lay down area on completion of constructions and also used in landscaping or to form berms.
C_LSG_09	Construction	Land, Soils & Geology Soil	Chapter 05	<ul style="list-style-type: none"> To help shed rainwater and prevent ponding and infiltration, the sides and top of the stockpiles will be regraded to form a smooth gradient with compacted sides, reducing infiltration and silt runoff.
C_LSG_10	Construction	Land, Soils & Geology Soil	Chapter 05	<ul style="list-style-type: none"> Manage potential silty runoff from stockpiles and excavated area using silt fences and silt traps placed at crossing points to avoid siltation of watercourses on and close to the Site. These will be maintained and cleaned regularly throughout the construction phase. Attention will also be paid to preventing the build-up of dirt on road surfaces, caused by lorries and other plant entering and exiting the Site. Segregate different grades of soil where they arise and topsoil will first be stripped from any land to be used for storing subsoil. Minimise movements of materials within the stockpiles in order to reduce the degradation of the soil structure.
C_LSG_11	Construction	Land, Soils & Geology Soil	Chapter 05	<ul style="list-style-type: none"> All excavated materials will be visually assessed for signs of possible contamination such as staining or strong odours. Should any unusual staining or odour be noticed, this soil will be segregated and samples of this soil analysed for the presence of possible contaminants in order to determine an appropriate disposal outlet.
C_LSG_12	Construction	Land, Soils & Geology Earthworks	Chapter 05	<p>As the glacial till loses its strength with increasing moisture content, the CEMP will also include the following mitigation measures for earthworks:</p> <ul style="list-style-type: none"> Maintain an even inclined surface on cut and fill surfaces to prevent the formation of ruts and hollows (which may promote ponding). Defer final shaping and trimming of formation levels until immediately prior to placement of surface dressing. Undertake earthworks in glacial till in times of dry weather, where possible. <p>Manage groundwater and surface water flows through drainage channels.</p>
C_LSG_13	Construction	Land and Soils Earthworks	Chapter 05	<p>It is recommended that earthworks be undertaken in dry weather, where possible, in view of the sensitivity of the overburden to moisture content. For the same reason, it is recommended even, inclined surfaces be maintained on cut and fill surfaces to prevent rutting and water pooling.</p>
C_LSG_14	Construction	Land, Soils & Geology Aggregates and Clean Fill	Chapter 05	<p>While it is anticipated all excavated materials will be re-used on-site for the Proposed Development, 26,000 tonnes of aggregate will be brought to site. The source of this fill material will be vetted in order to ensure that it is of a reputable origin and that it is 'clean' (<i>i.e.</i>, will not introduce contamination to the environment). All potential suppliers will be vetted for the following criteria:</p> <ul style="list-style-type: none"> Environmental management status.
		Water	Chapter 06	<ul style="list-style-type: none"> Regulatory and legal compliance status of the company.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				Clean fill material will be sourced from suppliers which comply with the above requirements. If recycled aggregate is used as imported fill, rigorous chemical testing will be undertaken to confirm that it is 'clean' (i.e., will not introduce contamination to the environment).
C_LSG_15	Construction	Land, Soils & Geology	Chapter 05	<ul style="list-style-type: none"> Designating a bunded storage area at the contractor's compound for all oils, solvents and paints used during construction. Oil and fuel storage tanks will be bunded to a volume of 110% of the capacity of the largest tank / container within the bunded area. Drainage from the bunded area will be diverted for collection and safe disposal. All containers within the storage area will be clearly labelled, so that appropriate remedial action can be taken in the event of a spillage. When moving drums from the bunded storage area to locations within the Proposed Development, a suitably-sized spill pallet will be used for containing any potential spillages during transit. Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area, which will be away from surface water gullies or drains. Spill kit facilities will be provided at the fuelling area in order to provide for accidental releases or spillages in and around the area. Any used spill kit materials will be appropriately disposed of using a hazardous waste contractor. Where mobile fuel bowsers are used on the Proposed Development, i.e., in the event of a machine requiring refuelling outside of the designated area, fuel will be transported in a mobile, double-skinned tank. Any flexible pipe, tap or valve in this tank will be fitted with a lock where it leaves the tank and locked shut when not in use. The pump or valve will also have a lock and be locked shut when not in use. Each bower will carry a spill kit and each bower operator will have spill response training. All equipment and machinery will be checked for leaks and other potential sources of contaminants before arriving on-site and on a daily basis. Any equipment or machinery likely to introduce to contaminants will not be brought on-site or will be removed from the Site immediately if any leak is discovered. Spill kits will be available to machine operators, and they will be trained in their use. The storage of hazardous substances will be necessary during construction. Fuel will be stored at least 50 m from a waterbody and refuelling will only take place in designated areas, on hardstanding by appropriately trained personnel.
		Fuel and Chemical Handling	Chapter 06	
		Water		
C_LSG_16	Construction	Land, Soils & Geology	Chapter 05	<ul style="list-style-type: none"> A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline wastewaters or contaminated storm water to the underlying subsoil, to surface water courses or to the marine environment. The pouring of concrete will take place within designated areas as required, using a geosynthetic material to prevent concrete runoff into the soil. The Construction Manager, the Environmental Manager and appropriate engineer will supervise all concrete pours. Works requiring discharge of water from excavations or areas of water which may have come in contact with concrete or cementitious material will require a site Permit to Pump under the CEMP. All such water will be tested for pH by contractors, and discharging water must go through a series of filtration systems before final discharge. Ready-mixed concrete will be either produced onsite in a batching plant or brought to the Proposed Development by truck. Washout of concrete-transporting vehicles will take place at an appropriate facility, offsite where possible, alternatively, where washout takes place onsite, it will be carried out in carefully-managed onsite wash out areas as detailed in the Concrete Washout Management Plan. Rainwater will be diverted away from the construction areas into the estuary or nearby ditches and streams. Water from construction areas will be filtered and treated to prevent sediment from entering surface waters. A regular water sampling regime will be put in place for the D1, D2 and D3 streams and the Surface Water Outfall on the Site and other potentially-impacted runoff points to the shoreline during construction activity onsite. Water samples will be taken at specified locations to be agreed with the local authority.
		Control of Concrete and Lime	Chapter 06	
		Water		

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Works requiring discharge of water from excavations or areas of water which may have come in contact with concrete or cementitious material will require a site Permit to Pump under procedures outlined in the CEMP. All such water will be tested for pH by contractors, and discharging water must go through a series of filtration systems before final discharge.
O_LSG_01	Operational	Land, Soils & Geology Fuel and Chemical Handling	Chapter 05	<ul style="list-style-type: none"> All hazardous or water-polluting materials will be handled or stored in a manner to prevent/ minimise potential impact on soil and in accordance with EPA <i>Guidance Note on Storage and Transfer of Materials for Scheduled Activities</i>. With regard to the secondary fuel source and emergency back-up generators associated with the Proposed Development, the diesel will be stored in fuel tanks in bunded areas. Bunding will also be provided for each transformer bay. The secondary fuel will be received via road tanker at an unloading station adjacent to the storage tank area and transferred to the storage tanks via a set of unloading pumps. If a leak from one of the fuel storage tanks were to occur this will be identified by the leak detection system that will be present on each tank and fuel will be allowed to collect within the bund. All bunds will provide 110% capacity, automatic emptying of rainwater and have valved discharge points. Secondary containment will also be provided for other hazardous materials to be stored onsite, such as maintenance oils and cleaning chemicals. Spill kits will be located at strategic points around the Proposed Development in order to ensure a quick response to any spillages shall they occur. Any used spill kits will be disposed of using a hazardous waste disposal contractor and in accordance with relevant EU and Irish waste management legislation. The EPA Guidance Note '<i>Storage and Transfer of Materials for Scheduled Activities</i>' (EPA, 2004) shall be taken into account when designing material storage and containment onsite.
O_LSG_02	Operational	Land, Soils & Geology Environmental management plan	Chapter 05	<ul style="list-style-type: none"> An environmental management plan will be prepared for the Proposed Development during the operational phase incorporating all mitigation measures and emergency response measures, as described in this assessment.
C_W_01	Construction	Water Dust	Chapter 06	<ul style="list-style-type: none"> Stockpiles will be managed to prevent dust generation during dry weather.
C_W_02	Construction	Water Dewatering	Chapter 06	<ul style="list-style-type: none"> Shallow groundwater is present in the superficial deposits and bedrock at the Proposed Development, such that the water table is likely to be intercepted during excavation works and dewatering activities required to facilitate excavations for the creation of the platform area, the underground electrical connections, drainage infrastructure, as well as any foundations required for the development.
C_W_03	Construction	Water Dewatering	Chapter 06	<ul style="list-style-type: none"> The Contractor's CEMP will include a programme of groundwater level and quality monitoring at existing groundwater monitoring boreholes at the site and controlled discharge of water abstracted during dewatering.
C_W_04	Construction	Water Dust	Chapter 06	<ul style="list-style-type: none"> Any discharge of and any consenting requirements for the discharge of such water, following treatment, will be discussed, and agreed with the KCC prior to the commencement of work. Dewatering fluids will be pumped via settlement tanks or collection basins where any solids in the water will settle out.
C_W_05	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> During the construction phase the mitigation measures will ensure that no sediment contamination, contaminated runoff or untreated wastewater will enter watercourses on or near the Site. Drainage channels and water streams will be clearly identified onsite and shown on method statements and site plans.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
C_W_06	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Groundwater from the upgradient area to the south discharging onto the main construction site at the cut faces to the south, east and west of the 18 m platform will be intercepted by drainage at the toe of the slopes and diverted away from the active construction areas to the extent possible. In case of impact by construction activity and machinery, this groundwater will pass through a sediment trap and oil: water separator prior to discharge under licence to the estuary via the outfall.
C_W_07	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Temporary surface water drainage and silt ponds will be constructed to control runoff from the earthwork stages. Drains carrying high sediment load will be diverted through silt ponds, located between the construction area and the surface water outfall. Surface water runoff from working areas will not be allowed to discharge directly to the local watercourses or to the estuary. To achieve this, the drainage system and silt ponds will be constructed prior to the commencement of major site works. All design and construction will be carried out in accordance with the Construction Industry Research and Information Association (CIRIA) C532 Control of Water Pollution from Construction Sites Guidance for Consultants and Contractors (CIRIA, 2001). During the construction activities there will be a requirement for diverting rainwater runoff away from the construction areas, into the nearby estuary. Rainwater runoff will be treated to prevent sediment from entering the estuary.
C_W_08	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Discharge water quality targets will be agreed with KCC and included in the CEMP. Regular water inspection and sampling regimes will be put in place via the CEMP on the foreshore during construction activity onsite to monitoring compliance with the discharge conditions.
C_W_09	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Excavations will only remain open for limited time periods to reduce groundwater ingress and water containing silt will be passed through a settlement tank/ silt pond or adequate filtration system prior to discharge. Discharge consent under the CEMP will be obtained for disposal of ground water arising from pumping or such water may be disposed of as construction site runoff, having first passed through a settlement tank or filtration system, where appropriate. A discharge licence will be required for temporary construction phase storm water discharges to the estuary; operational phase discharges will be regulated under the site's IE licence.
C_W_10	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> To minimise impact from material spillages, all oils, chemicals and waste materials will be stored within temporary bunded areas with a volume of 110% of the capacity of the largest tank / container within it. Fuel, oil and chemical filling and draw-off points will be located entirely within the bunded area(s). Drainage from the bunded area(s) will be diverted for collection and disposal.
C_W_11	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Vehicle / equipment refuelling and maintenance with hydraulic oil or lubricants will take place in bunded areas where possible. If it is not possible to bring the machine to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. Drip trays will be used to contain spillages with spill kits and hydrocarbon absorbent packs stored in vehicle cabs with operators fully trained in their use. Vehicles and equipment will not be left unattended during refuelling operations. Regular inspection and maintenance measures for site machinery will be included in the CEMP to minimise the likelihood of losses of hydraulic fluids or fuels to ground during the construction works.

Ref No.	Phase	Relevant Topic of the EIAR	EIAR Chapter	Mitigation Measures
C_W_12	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Spoil and temporary stockpiles including stone stockpile areas will be positioned in locations which are distant from drainage systems and retained drainage channels, away from areas subject to flooding. Runoff from spoil heaps will be prevented from entering watercourses by diverting it through onsite settlement ponds and removing material as soon as possible to designated storage areas.
C_W_13	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Culverts beneath the access road will be located at or close to the locations of existing natural flow paths to allow existing flows to continue. Lateral drainage will be within shallow geotextile and rock lined drainage channels to avoid the drainage of surrounding soils. The outer perimeter fence line will be set back from the L1010 road to avoid crossing watercourses as far as possible. The outer perimeter fencing is not expected to impact surface water flow where two minor watercourses are crossed, as there will not be a requirement for this fencing to be extended below the water's surface. The inner security fence surrounding the Power Plant will not cross any existing watercourse.
C_W_14	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> All watercourse crossings will be planned in accordance with applicable guidelines and in consultation with Inland Fisheries. No permanent watercourse diversions are proposed as part of the Proposed Development.
C_W_15	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> The access road will be designed to conduct road runoff to an engineered swale adjacent to the west side of the road. This swale will be profiled to grade continuously northward and to transfer the runoff from the access road to the sealed stormwater drainage system at the Power Plant area in the north of the Proposed Development.
C_W_16	Construction	Water Surface Water / Storm water	Chapter 06	<ul style="list-style-type: none"> Silt traps will be placed at crossing points to avoid siltation of watercourses. These will be maintained and cleaned regularly throughout the construction phase. Attention will also be paid to preventing the build-up of dirt on road surfaces, caused by lorries and other plant entering and exiting Site, via wheel washes and road sweepers as required.
C_W_17	Construction	Water Foul Water	Chapter 06	<ul style="list-style-type: none"> Foul sewage arising from kitchen facilities and temporary toilets and sanitary facilities during the Construction Phase on the Site will initially be discharged to an onsite receptacle which will be appropriately managed by the service contractor with relevant licences and emptied by tanker on a regular basis for disposal at a licensed waste facility. It is anticipated that, due to the scale of the Proposed Development, a canteen will be provided onsite during construction. Provisions will be made for a grease trap at the canteen drain outlet and this drain will connect to the onsite receptacle and later to the WWTP. Drumming of waste cooking oil within the canteen will also be provided.
C_W_18	Construction	Water Flood	Chapter 06	<p>Measures for protection of watercourses from flooding will be implemented as follows:</p> <ul style="list-style-type: none"> During the construction phase, the Contractor will monitor weather forecasts on a monthly, weekly, and daily basis, and plan works accordingly. The Contractor will describe in the Site ERP the actions it will take in the event of a possible flood event. These actions will be hierarchal meaning that as the risk increases the Contractor will implement more stringent protection measures. This is important to ensure all workers, the construction site and third-party land, property and people are adequately protected from flooding during the construction phase. Weekly checks will be carried out to ensure surface water drains are not blocked by silt, or other items, and that all storage is located at least 50m from the edge of the SAC. A regular log of inspections will be maintained, and any significant blockage or spill incidents will be recorded for root cause investigation purposes and updating procedures to ensure incidents do not reoccur.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Construction material(s), demolition materials and plant / welfare will not to be stored in the flood extents or elevated to minimise the impacts of flooding. All temporary works within the flood extents will be designed taking into account a flood impact loading and where possible, the Contractor will choose materials and / or equipment that are flood compatible to minimise the risk if a flood were to occur during any construction works. Continuous monitoring of weather conditions and tidal levels including surges will be completed throughout the works period.
O_W_01	Operational	Water Surface Water	Chapter 06	<ul style="list-style-type: none"> All hazardous or water polluting materials will be handled or stored in a manner to prevent / minimise potential impact to surface water. With regard to the emergency back-up generators associated with the Proposed Development, the diesel will be stored in fuel tanks located in bunded areas.
O_W_02	Operational	Water Surface Water	Chapter 06	<ul style="list-style-type: none"> Secondary Fuel will be stored in two (2 No.) storage tanks (~5,000 m³ each) and three-day tanks (~2,000 m³ each) which will be site fabricated steel storage tanks. Tertiary containment, bunding and associated pipework will be designed in accordance with EPA Guidance Note on Storage and Transfer of Materials for Scheduled Activities. The secondary containment (primary bund) design will allow the greater of 110% of the largest tank within the bund or 25% of the total volume of substance within the bund, whichever is the larger. A second bund will be built and will contain any spillage should the primary bund fail. Refer to Drawing 198291-SS-A411 for details of the bunding. If a leak from one of the tanks were to occur this will be identified by the leak detection system that will be present on each tank. The generator will be disabled in this event and the fuel will be allowed to collect within the second skin of the tank, which will have a 110% capacity. All bunded areas will have valved discharge points.
O_W_03	Operational	Water Surface Water	Chapter 06	<ul style="list-style-type: none"> Emissions from chemical spills / leaks or runoff from rainwater that has passed over impermeable surfaces will be prevented from polluting local surface water, as all surface water runoff from Power Plant and parking areas will be directed to hydrocarbon interceptors prior to discharge to the Shannon Estuary or Ralappane Stream. The use of hydrocarbon interceptors will significantly reduce the likelihood of water contamination from vehicle fuel or chemical spills. Spill kits will be located at strategic points around the Proposed Development in order to ensure a quick response to any spillages should they occur. Any used spill kits will be disposed of using a hazardous waste disposal contractor and in accordance with all relevant EU and Irish waste management legislation (<i>i.e.</i> the Waste Management Acts 1996-2011 and any regulations made thereunder, and the Waste Framework Directive). The EPA Guidance Note 'Storage and Transfer of Materials for Scheduled Activities' (EPA 2004) shall be taken into account when designing material storage and containment at the Proposed Development. The transformers will be installed in bunds designed to retain a minimum of 110% of the total quantity of oil present in the transformer, below the fire trap. These bunds will be tested after construction and during maintenance to ensure the water depth loss is no more than 1 mm/hour over a continuous 6-hour period. Automatic emptying of rainwater from the bund will be achieved with a BundGuard© system or similar.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
O_W_04	Operational	Water Fire Water	Chapter 06	<ul style="list-style-type: none"> In the event of a fire, the fire water will drain through the storm sewerage system and hydrocarbon interceptors (where present) and be diverted to the firewater impoundment basin, sized and designed in accordance with the Irish EPA Guidance on Retention of Firewater, prior to inspection and discharge to the estuary. The retention pond will be rendered impermeable by use of an appropriate liner, and periodically integrity-tested in line with the requirements of the site's IE licence. All process area site storm drainage will pass through the retention pond. An automatic shut-off valve linked to the site's fire detection system would be installed on the drainage outlet point.
O_W_05	Operational	Water Foul Water	Chapter 06	<ul style="list-style-type: none"> All foul water from the Proposed Development will be pumped or fall by gravity to a WWTP. The WWTP will be a pre-engineered biological treatment system which will treat the effluent to required discharge standards set out by the IE licence. The WWTP will be sized to cater for a population of approximately 67 people. The treated effluent will be monitored in accordance with the site's IE licence requirements prior to discharge to the estuary via the same discharge outfall pipe as the surface water. Effluent leaving the WWTP will be continuously monitored for flow rate and pH before discharging to the estuary. The automatic control system associated with the WWTP will sound an alarm if pH falls outside of the expected range. This will alert the operator to take corrective action to remedy the problem. If the problem continues to go outside the pre-set range, this will automatically close the discharge valve.
O_W_06	Operational	Water Water Supply	Chapter 06	<ul style="list-style-type: none"> The water supply system will be metered to determine water consumption and facilitate leakage detection and will be in accordance with Irish Water requirements.
O_W_07	Operational	Water Storm Water	Chapter 06	<ul style="list-style-type: none"> To minimise sediment, build up within the storm water drainage network, trapped inlets will be used at all points of entry and key manholes will have sumps to collect material. A regular maintenance regime, including monitoring, will be put in place to remove any excess build-up of material.
O_W_08	Operational	Water Flood Risk	Chapter 06	<ul style="list-style-type: none"> These will be culverted at an adequate size to have a minimal impact on the existing hydraulic regime in the area to the Ralappane Stream. The Site will have a constructed stormwater drainage system capable of handling anticipated peak stormwater volumes for a 100-year, 24-hour rainfall event (162 L/s/ha, which equates to a total discharge rate of approximately 3,125 L/s peak flow) and which will incorporate a firewater retention pond and discharge monitoring and flow control devices.
O_W_09	Operational	Water Environmental Management Plan	Chapter 06	<ul style="list-style-type: none"> An environmental management plan for the Proposed Development will be implemented during the operational phase under the IE Licence, incorporating all mitigation measures and emergency response measures, as described in this chapter.
D_W_01	Decommissioning	Water	Chapter 06	<ul style="list-style-type: none"> In the event of decommissioning, measures will be undertaken to ensure that there will be no significant, negative environmental effects from the development and in accordance with the IE Licence CRAMP.
C_B_01	Construction	Biodiversity Marine Ecology	Chapter 07A	<ul style="list-style-type: none"> Measures will include standard construction best practice used to manage the risk of potential for loss of hydrocarbons such as diesel and hydraulic fluids.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Careful supervision of construction operations and general construction practice will reduce the risk from impacts so that the likelihood of impacts is best described as low.
C_B_02	Construction	Biodiversity Marine Ecology	Chapter 07A	<ul style="list-style-type: none"> At a minimum the oil spill response equipment will include the following: absorbent mats, waste-bags, oil splash goggles, gloves and vinyl or rubber shoe covers to protect the user from the harmful effects of the spilled material.
C_B_03	Construction	Biodiversity Marine Ecology	Chapter 07A	<ul style="list-style-type: none"> Imported backfill material will be washed (cleaned) to remove fines and checked for invasive species before use. Imported material to be used backfill will be stored on the Site; measures to avoid the release of sediment will be implemented (including silt fences). Clean (washed) rock material will be used as rock protection to minimise the risk of introducing fine materials. The implementation of general construction practice will ensure that the likelihood of pollution in a well-equipped, maintained and managed construction site is low.
C_B_04	Construction	Biodiversity Marine Ecology – Noise	Chapter 07A	<ul style="list-style-type: none"> Mitigation measures during blasting: Whilst all blasting is land based there will be propagation of sound into the underwater environment. Thus, the standard mitigation measures for blasting will be adopted as a precautionary measure – qualified MMO, a 1000 m observation zone and an observation period of 30 minutes. As only single blasts will take place in each event (not a series), a soft-start is not included. MMO training: Use trained and experienced marine mammal observers – the guidance states this should be a visual observer who has undergone formal marine mammal observation and distance estimation training (JNCC MMO training course or equivalent) and also has a minimum of 6 weeks full-time marine mammal survey experience at sea over a 3-year period in European waters. Monitoring: The marine mammal monitoring programme, currently being undertaken by the Irish Whale and Dolphin Group (in the vicinity of the project using CPODs) will be continued into the construction phase for the validation of predictions (based on observations from other studies – see impact assessment) that any animals displaced from an area return after the construction activity stops.
C_B_05	Construction	Biodiversity Terrestrial Ecology	Chapter 07B	<p>Mitigation and monitoring measures (of relevance in respect of any potential ecological effects) will be implemented throughout the project, including the preparation and implementation of detailed method statements. The works will incorporate the relevant elements of the guidelines outlined below:</p> <ul style="list-style-type: none"> Control of water pollution from construction sites. Guidance for consultants and contractors (C532). CIRIA. Masters-Williams et al (2001). Control of water pollution from linear construction projects. Technical guidance (C648). CIRIA. Murnane, et al. (2006).
C_B_06	Construction	Biodiversity Terrestrial Ecology	Chapter 07B	<ul style="list-style-type: none"> All personnel involved with the Proposed Development will receive an onsite induction relating to construction and operations and the environmentally sensitive nature of European sites and to re-emphasise the precautions that are required as well as the precautionary measures to be implemented. Site managers, foremen and workforce, including all subcontractors, will be suitably trained in pollution risks and preventative measures.
C_B_07	Construction	Biodiversity Terrestrial Ecology	Chapter 07B	<p>All staff and subcontractors have the responsibility to:</p> <ul style="list-style-type: none"> Understand the importance of avoiding pollution onsite, including noise and dust, and how to respond in the event of an incident to avoid or limit environmental impact. Respond in the event of an incident to avoid or limit environmental impact.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Report all incidents immediately to the project manager and the Environmental (Ecological) Clerk of Works (ECOW). Monitor the workplace for potential environmental risks and alert the site manager if any are observed. Co-operate as required, with site inspections.
C_B_08	Construction	Biodiversity Terrestrial Ecology	Chapter 07B	<ul style="list-style-type: none"> As part of the assessment of the required construction mitigation, best practice construction measures which will be implemented for the Proposed Development were considered. A summary of the measures relevant to hydrology are provided as follows and are in accordance with Construction Industry Research and Information Association (CIRIA) guidance – <i>Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors</i> (Masters-Williams <i>et al.</i> 2001).
C_B_08	Construction	Biodiversity Terrestrial Ecology – Bridge Construction	Chapter 07B	<p>Bridge construction on the Ralappane Stream will use a single span, pre-cast concrete bridge near the southern boundary of the Proposed Development site. Two drainage ditches within the Proposed Development site will be culverted. In addition to the general measures described above, the following specific mitigation measures will be implemented for crossing of the Ralappane Stream and drainage ditch:</p> <ul style="list-style-type: none"> Works will comply with The IFI's <i>Guidelines on protection of fisheries during construction works in and adjacent to waters</i> (IFI, 2016). No instream works will take place in the Ralappane Stream. Appropriate silt control measures such silt barriers (e.g. straw or silt fence) will be employed where required. Construction activities will be undertaken during daylight hours only (i.e. 7:30 to 18:00 Monday to Friday and 8:00 to 14:00 on Saturday). This will ensure that there is potential for undisturbed fish passage at night. The works will be temporary and will not create a significant long-term barrier to fish movement. An appropriate native wildflower mix as determined by the ECoW based on ground conditions, will be utilised to re-vegetate any disturbed areas along the bank of the Ralappane Stream. Although no Common Frog were observed in drainage ditches within the Proposed Development site boundary, they will be surveyed prior commencement of site works by the ECoW as a precautionary measure. Any Common Frog, if recorded, will be moved to suitable habitat in the wider landscape under licence from NPWS.
C_B_09	Construction	Biodiversity Terrestrial Ecology – Noise	Chapter 07B	<ul style="list-style-type: none"> Mitigation and monitoring measures will be employed to ensure that potential noise and vibration impacts at nearby sensitive receptors due to construction activities are minimised. The preferred approach for controlling construction noise is to reduce source levels where possible, but with due regard to practicality.
C_B_10	Construction	Biodiversity Terrestrial Ecology – Lighting	Chapter 07B	<ul style="list-style-type: none"> Lighting associated with the Proposed Development site works could cause disturbance/ displacement of fauna. If of sufficient intensity and duration, there could be impacts on reproductive success. Construction works will take place largely during 7:30 to 18:00 Monday to Friday and 8:00 to 14:00 on Saturday. Construction works outside these hours will only take place in exceptional circumstances (i.e., for specific engineering works e.g., concrete pours etc.). It is likely that a number of continuous construction phase works will also be required outside these hours on a limited number of occasions. Where site lighting is required during construction, the following mitigation measures will be followed. Site lighting will be provided by tower mounted temporary portable construction floodlights. The floodlights will be cowled and angled downwards to minimise spillage to surrounding habitats.

Ref No.	Phase	Relevant Topic of the EIA	EIAR Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Lighting mitigation measures will follow <i>Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers</i> (Bat Conservation Ireland, 2010). The following measures will be applied in relation to construction works lighting: Lighting will be provided with the minimum luminosity necessary for safety and security purposes. Where possible, lighting will be restricted to the working area and using the cowl and angling noted above, will minimise overspill and shadows on sensitive habitats outside the construction area. During construction, lighting will be positioned and directed so that it does not to unnecessarily intrude on adjacent ecological receptors and structures used by protected species. The primary area of concern is the potential impact at the SAC/ SPA boundary, the Ralappane Stream as well as hedgerows, treelines along the boundary of the Site. There will be no directional lighting focused towards these areas and cowling and focusing lights downwards will minimise light spillage.
C_B_10	Construction	Biodiversity Terrestrial Ecology – Habitats	Chapter 07B	<ul style="list-style-type: none"> The Wildlife Act 1976, as amended, provides that it is an offence to cut, grub, burn or destroy any vegetation on uncultivated land or such growing in any hedge or ditch from 1st March to 31st August. Exemptions include the clearance of vegetation in the course of road or other construction works or in the development or preparation of sites on which any building or other structure is intended to be provided. If works are carried out during the breeding season, a pre-construction survey will be carried out by the ECoW and if birds are detected appropriate mitigation measures will be implemented. Where possible, vegetation will be removed outside of the breeding season and in particular, removal during the peak-breeding season (April-June inclusive) will be avoided. This will also minimise the potential disturbance of breeding birds outside of the Proposed Development site boundary. Particular care will be taken at the boundary between the Proposed Development site and the SAC, SPA and pNHA so that construction activities do not cause damage to habitats in this area. These habitats will be securely fenced off early in the construction phase. The fencing will be clearly visible to machine operators. The Ralappane Stream runs from the Proposed Development site through the SAC and pNHA to the estuary, it is important that construction activities do not result in pollution of this watercourse, either through siltation, which interferes with water flow, vegetation growth and aquatic fauna, or pollution (e.g. chemical). Refer to Chapter 06 Section 6.10 for further details on mitigation and monitoring measures for water. To prevent incidental damage by machinery or by the deposition of spoil during site works, hedgerow, tree and scrub/woodland vegetation which are located in close proximity to working areas will be clearly marked and fenced off to avoid accidental damage during excavations and site preparation. The ECoW will specify appropriate protective fencing where required. Habitats that are damaged and disturbed will be reinstated and landscaped once construction is complete. Disturbed areas will be seeded or planted using appropriate native grass or species native to the areas where necessary. Native woodland and shrub planting will include Scot's Pine, Willow, Oak, Alder, Rowan, Hazel, Blackthorn and Holly. Native wildflower mixes will provide a variety of flowers to encourage biodiversity. Wildflower seed mixes will be from 100% native Irish provenance and sourced within Ireland. The overall site will undergo seeding once, and then will be left to naturally recolonise. Natural regeneration of vegetation will also occur. Details on landscaping are included in Figure F2.4 in Volume 3. There will be a defined working area which will be fenced off with designated haul routes to prevent inadvertent damage to adjoining habitats.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
C_B_11	Construction	Biodiversity Terrestrial Ecology – Trees	Chapter 07B	<ul style="list-style-type: none"> Tree root systems can be damaged during site clearance and groundworks. Materials, especially soil and stones, can prevent air and water circulating to the roots. No materials will be stored within the root protection area/ dripline of trees earmarked for retention. The ECoW will specify appropriate protective fencing where required.
C_B_12	Construction	Biodiversity Terrestrial Ecology – Badgers	Chapter 07B	<ul style="list-style-type: none"> The Proposed Development will require exclusion of Badgers from subsidiary/ outlier setts, however in both instances both social groups of Badgers would be expected to continue to use their main setts. Prior to construction works, the ECoW will obtain a derogation licence from the NPWS if required, to facilitate licenced exclusion of Badgers from Sett 1 (if active) and Sett 2 in accordance with a plan approved by the NPWS. The destruction of a successfully evacuated Badger sett may only be conducted under the supervision of qualified and experienced personnel under licence, if required, from the NPWS. The possibility of Badgers remaining within a sett must always be considered; suitable equipment should be available on hand to deal with Badgers within the sett or any Badgers injured during sett destruction. Badger sett tunnel systems can extend up to approximately 20 m from sett entrances. Therefore, no heavy machinery should be used within 30m of Badger setts (unless carried out under licence); lighter machinery (generally wheeled vehicles) should not be used within 20 m of a sett entrance; light work, such as digging by hand or scrub/vegetation clearance should not take place within 10 m of sett entrances. During the breeding season (December to June inclusive), none of the above works should be undertaken within 50 m of active setts nor blasting within 150 m of active setts. Affected Badger setts will be clearly marked and the extent of bounds prohibited for vehicles clearly marked by fencing and signage. The most recent surveys show that the two main Badger setts are located outside of the Proposed Development site boundary and the two setts to be directly affected are subsidiary setts. The bait marking survey indicates that the setts are linked as follows: <ul style="list-style-type: none"> Sett 4 (main sett) is located to the east of the Proposed Development. Sett 1 is located within the Proposed Development site boundary. These setts are used by the same social group. Sett 3 (main sett) is located to the east of the Proposed Development. Sett 2 is located within the Proposed Development site boundary. These setts are used by the same social group. The presence of alternative setts within the particular social group's territory is required to ensure that excluded Badgers are able to relocate to a suitable alternative refuge. The objective is to allow the Badgers to remain within their territory, even though a portion of their current territory may be lost as a result of a particular development. There is a standard methodology which can be utilised to exclude Badgers from setts A methodology for the exclusion of Badgers from affected setts and displacement of Badgers to artificial setts is outlined in the National Roads Authority's publication <i>Guidelines for the Treatment of Badgers Prior to the Construction of National Road Schemes</i> (NRA 2005a). Detailed mitigation and monitoring measures including method statements will be agreed with the NPWS prior to implementation. Prior to the commencement of works, setts will be surveyed by the ECoW to determine current usage patterns. Exclusion of Badgers from any currently active sett will only be carried out during the period of July to November (inclusive) in order to avoid the Badger breeding season. In the instance of disused setts or setts verified as inactive, and to prevent their reoccupation, the entrances may be lightly blocked with vegetation and a light application of soil (soft blocking).

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> • The purpose of soft-blocking is to confirm that an apparently inactive sett is not occupied by Badgers. If all entrances remain undisturbed for approximately five days, the sett should be destroyed immediately using a mechanical digger, under the supervision of the licensee. Should there be any delay in sett destruction, the soft-blocked entrances should be hard-blocked and the sett destroyed as soon as possible, again under the supervision of the licensee. Hard-blocking is best achieved using buried fencing materials and compacted soil with further fencing materials laid across and firmly fixed to blocked entrances and surrounds • Where field signs or monitoring reveal any suggestion of current or recent Badger activity at any of the sett entrances, the sett requires thorough evacuation procedures. • Inactive entrances may be soft and then hard-blocked, as described for inactive setts, but any active entrances should have one-way gates installed (plus proofing around sides of gates) to allow Badgers to exit but not to return. The gates should be tied open for three days prior to being set to exclude. Sticks should be placed at arm's length within the gated tunnels to establish if Badgers remain within the sett. • Gates should be left installed, with regular inspections, over a minimum period of 21 days (including period with gates tied open) before the sett is deemed inactive. Any activity at all will require the procedures to be repeated or additional measures taken. Gates might be interfered with by other mammals or members of the public - hence the importance of regular exclusion monitoring visits. Sett destruction should commence immediately following the 21-day exclusion period, provided that all Badgers have been excluded. • Badgers will often attempt to re-enter setts after a period, and if gates are left in place for any long period, they may attempt to dig around them or even create new entrances and tunnels into the sett system. • Where an extensive sett is involved, an alternative method of evacuating Badgers is to erect electric fencing around the sett (ensuring all entrances are included) with one-way Badger-gates installed within the electric fence at points where the fence crosses Badger paths leading to and from the sett. The exclusion should again take place over a minimum period of 21 days before sett destruction; this monitoring period would be contingent upon no Badger activity being observed within the fenced area. Fencing may not be practical in many situations due to the topography or the terrain – and can be difficult to install effectively. If no activity is observed, then the sett may be destroyed, under supervision by the ECoW. • Destruction is usually undertaken with a tracked 12-25 tonne digger, commencing at approximately 25m from the outer sett entrances and working towards the centre of the sett, cutting approximately 0.5 m slices in a trench to a depth of 2 m. Exposed tunnels may be checked for recent Badger activity, with full attention paid to safety requirements in so doing. The sett should be destroyed from several directions, in the above manner, until only the central core of the sett remains. • Once it is ensured that no Badgers remain, the core may then also be destroyed and the entire area back-filled and made safe. Sett excavation should, preferably, be concluded within one working day, as Badgers may re-enter exposed tunnels and entrances. • A report detailing evacuation procedures, sett excavation and destruction, and any other relevant issues will be submitted to the NPWS. • Construction activities within the vicinity of affected setts may commence once these setts have been evacuated and destroyed under licence (if required) from the NPWS. Where affected setts do not require destruction, construction works may commence once recommended alternative mitigation measures to address the Badger issues have been complied with. • Badger access points will be provided to allow Badgers to access the development area once complete (See NHBS, 2021 or similar). Gates will be placed within fences along the western, eastern and southern boundaries to maximise potential usage by the different social groups that occur within this area.

Ref No.	Phase	Relevant Topic of the EIA	EIAR Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Monitoring of Badger setts will be carried out during construction works and a five-year post-construction monitoring programme will be implemented.
C_B_13	Construction	Biodiversity Terrestrial Ecology – Bats	Chapter 07B	<ul style="list-style-type: none"> During the site works, general mitigation measures for bats will follow the National Road Authority's 'Guidelines for the Treatment of Bats during the Construction of National Road Schemes' NRA (2005c) and 'Bat Mitigation Guidelines for Ireland: Irish Wildlife Manuals, No. 25' (Kelleher, C. & Marnell, F. (2006)). These documents outline the requirements that will be met in the pre-construction (site clearance) stage to minimise negative effects on roosting bats or prevent avoidable effects resulting from significant alterations to the immediate landscape. A small night roost for Lesser Horseshoe Bats and a small Common Pipistrelle roost was recorded in a complex of farm buildings south-west of the Proposed Development site. These buildings will not be affected by the Proposed Development. Two structures are located within the Proposed Development site boundary and these will be demolished. However, no bat roosts were recorded within these structures. Mitigation measures will be agreed with the National Parks and Wildlife Service prior to any demolition works and will include the following: <ul style="list-style-type: none"> In all cases immediately in advance of demolition a bat specialist will undertake an examination of the building. If bats are present at the time of examination it is essential to determine the nature of the roost (i.e. number, species, whether it is a breeding population) as well as its exact location. If bats are recorded in buildings earmarked for demolition, special mitigation measures to protect bats will be put in place and a license to derogate from the conservation legislation will be sought from the NPWS prior to the commencement of demolition works. The contractor will take all required measures to ensure works do not harm individuals by altering working methods or timing to avoid bats, if necessary. If roosting habitat for bats is removed, replacement habitat will be provided. A number of trees will be removed prior to construction. Although mature trees with the potential of be of value as bat roosts are absent from the site, the following precautionary measures will be implemented. <ul style="list-style-type: none"> The bat specialist will work with the contractor to ensure that the loss of trees is minimised and that trees earmarked for retention are adequately protected. Tree-felling of mature trees will ideally be undertaken in the period September to late October/ early November. During this period bats are capable of flight and may avoid the risks of tree-felling if proper measures are undertaken. Felled trees will not be mulched immediately. Such trees will be left lying several hours and preferably overnight before any further sawing or mulching. This will allow any bats within the tree to emerge and avoid accidental death. The bat specialist will be on-hand during felling operations to inspect felled trees for bats. If bats are seen or heard in a tree that has been felled, work will cease and the local NPWS Conservation Ranger will be contacted. Tree will be retained where possible and no 'tidying up' of dead wood and spilt limbs on tree specimens will be undertaken unless necessary for health and safety. Treelines outside the Proposed Development area but adjacent to it and thus at risk, will be clearly marked by a bat specialist to avoid any inadvertent damage. During construction directional lighting will be employed to minimise light spill onto adjacent areas. Where practicable during night-time works, there will be no directional lighting focused towards watercourses or boundary habitats and focusing lights downwards will be utilised to minimise light spillage. If bats are recorded by the bat specialist within any trees no works will proceed without a relevant derogation licence from the NPWS.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> As a biodiversity enhancement measure it is proposed that bat boxes will be put up within the Proposed Development site. It is proposed that eight bat boxes will be located within the overall site (see Wildcare, 2021 for box proposed or similar). The boxes will be erected by the ECoW taking into account landscape plans, vehicle movements and lighting. As noted in Section 7B.7.1.5, lighting mitigation measures will follow <i>Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers</i> (Bat Conservation Ireland, 2010). All mitigation measures including detailed method statements will be agreed with the NPWS prior to commencement of works, which could affect any bat populations onsite.
C_B_14	Construction	Biodiversity Terrestrial Ecology – Otters	Chapter 07B	<ul style="list-style-type: none"> No signs of Otter or Otter holts were noted within 150 m of the Proposed Development however Otter was recorded along the Ralappane Stream and to the west of the Proposed Development. A detailed pre-construction survey will be carried out no more than 10-12 months prior to the commencement of construction works to confirm the absence of Otter holts within 150 m of the Proposed Development. If Otter holts are recorded at that time, the ECoW will determine the appropriate means of minimising effects i.e. avoidance, moving works, timing of works etc. If required the ecologist will obtain a derogation licence from the NPWS, to facilitate licenced exclusion from the breeding or resting site in accordance with a plan approved by the NPWS. Any holts found to be present will be subject to monitoring and mitigation as set out in the NRA publication <i>Guidelines for the Treatment of Otter prior to the Construction of National Road Schemes</i> (2008). If found to be inactive, exclusion of holts may be carried out during any season. No wheeled or tracked vehicles (of any kind) will be used within 20m of active, but non-breeding, Otter holts. Light work, such as digging by hand or scrub/vegetation clearance will also not take place within 15m of such holts, except under licence. The prohibited working area associated with Otter holts will be fenced and appropriate signage erected. Where breeding females and cubs are present no evacuation procedures of any kind will be undertaken until after the Otters have left the holt, as determined by the ECoW. Breeding may take place at any season, so activity at a holt must be adjudged on a case-by-case basis. On occasion, Otter holts may be directly affected by the scheme. To ensure the welfare of Otter, they must be evacuated from any holts present prior to any construction works commencing. The exclusion process, if required, involves the installation of one-way gates on the entrances to the holt and a monitoring period of 21 days to ensure the Otters have left the holt prior to removal.
C_B_15	Construction	Biodiversity Terrestrial Ecology – Common Frog	Chapter 07B	<ul style="list-style-type: none"> A visual search of the wet grassland habitat and drainage ditches to be removed will be carried out in the days prior to commencement of works and any frogs will be removed to alternative wet grassland habitat elsewhere within the landholding. This will be carried out under licence from the NPWS and under supervision of the ECoW.
C_B_16	Construction	Biodiversity Terrestrial Ecology – Breeding Birds	Chapter 07B	<ul style="list-style-type: none"> No signs of nesting birds were recorded in buildings at the Proposed Development site during the 2023 breeding bird surveys. However, prior to demolition buildings will be checked for nesting Swallows (and other birds). If nesting birds are recorded, all demolition operations will be carried out between October and March, when birds have finished breeding. Where possible, vegetation will be removed outside of the breeding season and in particular, removal during the peak-breeding season (April-June inclusive) will be avoided. This will also minimise the potential disturbance of breeding birds outside of the Proposed Development site boundary. As a biodiversity enhancement measure ten bird nesting boxes (various types) will be located within the Proposed Development site boundary at locations specified by the ECoW. It is noted that provision of woodland planting and the use of native wildflower planting will provide additional nesting and feeding sites for birds, particularly as these habitats mature.
C_B_17	Construction	Biodiversity	Chapter 07B	<ul style="list-style-type: none"> A detailed method statement will be drawn up by the ECoW and agreed with the NPWS prior to commencement of works. The method statement will specify the timing of blasting operations and the need, if any, for ecological supervision.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
Terrestrial Ecology – Estuarine Birds				
C_B_18	Construction	Biodiversity Terrestrial Ecology – Biodiversity and Landscaping Plan	Chapter 07B	<ul style="list-style-type: none"> This includes detailed areas of native woodland and native scrub habitat as well as native wildflower planting. The woodland planting mix will be dominated by native species including Scots Pine <i>Pinus sylvestris</i>, Willow, Pedunculate Oak <i>Quercus robur</i> and Sessile Oak <i>Quercus petraea</i>, Alder, Rowan <i>Sorbus</i> spp. and Crab Apple <i>Malus</i> spp.. The woodland edge planting mix will include Hazel <i>Corylus</i> spp., Hawthorn, Blackthorn, Elder <i>Sambucus</i> spp. and Holly <i>Ilex</i> spp.. The objective of these elements is to create natural, multi-layered woodland habitat which will be of local ecological value and has the potential to support native flora and fauna. A linear strip of woodland along the southern boundary will help to maintain connectivity (east to west) between habitats in the wider landscape. Additional native specimen trees (Willow, Wild Cherry <i>Prunus avium</i>, Rowan, Whitebeam <i>Sorbus subg. Aria</i> and Silver Birch) will be planted on peripheral areas such as the road edge and administration area. As detailed in Figure F2-4 in Volume 3 a native wildflower mixes (of 100% Irish provenance) will be utilised to provide a more diverse sward which is of higher ecological value for invertebrates and birds. Native wildflower mixes will provide a variety of flowers to encourage biodiversity. Wildflower seed mixes will be from 100% native Irish provenance and sourced within Ireland. The overall site will undergo seeding once, and then will be left to naturally recolonise. Perennial Rye Grass or other vigorous amenity/ agricultural grass species will not be utilised as they tend to over-dominate the sward and reduce overall biodiversity. The final wildflower mix will be specified by the ECoW based on final ground conditions including alkalinity, fertility and moisture levels. Based on the seed mix utilised and on prevailing ground conditions, the ECoW will specify the management regime, including weed control and mowing regime, necessary to maximise biodiversity and habitat value. Five insect nesting boxes suitable for <i>Hymenoptera</i> spp. (bees and wasps) will be put in place within the site boundary as a biodiversity enhancement measure.
C_B_19	Construction	Biodiversity Terrestrial Ecology – Invasive Species	Chapter 07B	<ul style="list-style-type: none"> Prior to the commencement of construction works an invasive species survey will be undertaken within the Proposed Development boundary by a competent ecologist to determine if invasive species listed under Part 1 of the Third Schedule of S.I No. 477 of 2011 have established in the area in the period between pre-planning and post consent. In the event that invasive species are identified within the works area a site-specific Invasive Species Management Plan will be developed and implemented by a competent specialist on behalf of the Contractor. In addition, in order to comply with Regulations 49 and 50 of the European Communities (Birds and Natural Habitat) Regulations (2011) the Contractor will ensure biosecurity measures are implemented throughout the construction phase to ensure the introduction and translocation of invasive species is prevented. The appointed ECoW will carry out a toolbox talk which will identify invasive species and will also implement biosecurity measures such as the visual inspection of vehicles for evidence of attached plant or animal material prior to entering and leaving the works area.
O_B_01	Operational	Biodiversity Terrestrial Ecology – Environmental Management System	Chapter 07B	<ul style="list-style-type: none"> During the operational phase the site environmental management system will address management of potentially contaminating materials such as fuel, lubricating oils, solvent, etc. and ensure such material is appropriately controlled, in accordance with regulatory requirements and industry best practice.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
O_B_02	Operational	Biodiversity Terrestrial Ecology – Drainage	Chapter 07B	<ul style="list-style-type: none"> The drainage design for the Power Plant will consider the magnitude of the changes in infiltration and runoff characteristics and the significance of potential impacts at the wetland. Further details on operational water management are included in Chapter 06 (Water).
O_B_03	Operational	Biodiversity Terrestrial Ecology – Lighting	Chapter 07B	<ul style="list-style-type: none"> Lighting shall be provided in plant areas where safe access and safe conditions for work activities is required at night. The facility would have area lighting installed on a down angle to cover the Power Plant. Lighting levels will meet national and international engineering standards as a minimum.
O_B_04	Operational	Biodiversity Terrestrial Ecology – Badgers	Chapter 07B	<ul style="list-style-type: none"> Badger access points will be provided to allow Badgers to access the development area once complete (See NHBS, 2021 or similar). Gates will be placed within fences along the western, eastern and southern boundaries to maximise potential usage by the different social groups that occur within this area.
O_B_05	Operational	Biodiversity Terrestrial Ecology – Lighting / Bats	Chapter 07B	<p>Where possible (and in compliance with industry standards) lighting will follow the Bat Conservation Ireland Lighting Guidelines and the Bat Conservation Trust '<i>Bats and artificial lighting in the UK</i>' 2018 Guidelines. As outlined in Chapter 10 (Landscape and Visual Impact) operational mitigation measures to reduce the visual effects of increased lighting along the Shannon Estuary include the following:</p> <ul style="list-style-type: none"> Lighting will be kept to essential locations only, with the position and direction of lighting being designed to minimise intrusion and disturbance to adjacent areas. Use of full cut-off lanterns are proposed to minimise light spillage and upward escape of light onto adjacent areas. LED type lanterns, of the Warm White type will be utilised where possible with a Colour Temperature of 3,000 kelvin, as is considered least disruptive to the emergence of bats from roosts at dusk, and subsequent movement from habitats to foraging locations. Lighting will be minimised in terms of number of lights and the power of the lights (lux level). Directional lighting, facing and located away from any surrounding vegetation. Lighting will be turned off where possible when not in use except to meet the minimum requirements for Health and Safety (refer to night-time photomontages for Viewpoints/ Photomontages 8 and 12 and the differences between 'main lights turned on only' and 'all lights turned on'.
O_B_06	Operational	Biodiversity Terrestrial Ecology – Noise	Chapter 07B	<ul style="list-style-type: none"> The principal mitigation measures required for the development in relation to noise concern selection of equipment, sound containment, and acoustic attenuators, in order to achieve the required limits. The predicted noise levels, as outlined in Chapter 09 (Airborne Noise and Groundborne Vibration) are considered to be readily technically achievable using standard methods.
C_AQ_01	Construction	Air Quality Dust	Chapter 08	<p>Standard practice dust mitigation measures as recommended by the Institute of Air Quality Management (excluding those that are not practical for this Site) and in the CEMP, Appendix A2.3. These include, but are not limited to:</p> <ul style="list-style-type: none"> Production of and adherence to a site-specific dust minimisation control plan (a Dust Management Plan), setting out the control measures to implemented across the Site and associated procedures. A proportionate level of dust monitoring relative to the risk of dust impacts, to ascertain the effectiveness of measures included with in the CEMP and dust minimisation control plan. Dust deposition monitoring will be in place during construction. This could include passive dust deposition monitoring at potential locations shown on Figure 8.5.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
O_AQ_01	Operational	Air Quality Embedded Mitigation	Chapter 08	<p>The Proposed Development includes a number of embedded mitigation measures that will likely reduce the impact of emissions on nearby air quality sensitive receptors. Some of these measures are designed with the specific purpose of controlling emissions to air, and others are included primarily for other purposes, but have an additional benefit of reducing air quality impacts. These measures are summarised below.</p> <ul style="list-style-type: none"> Emission release heights for the largest and most frequent sources of emissions to air have been designed to encourage good dispersion, through height above ground level and height above nearby buildings and structures. The layout of the Site maximises distance between the main continuous sources of emissions to air and the nearest air quality sensitive receptors. Whilst the air quality assessment has assumed continuous operation of the power plant (CCGT) throughout the year, in reality the power plant will only operate for the energy demand required at any given time. The actual operation of the plant will be determined by many factors such as power demand itself from the grid which varies hour by hour, the amount of renewable generation on the system, its bid price into the market compared to other generators, and the rules of the grid to ensure priority is given to renewable generation. The grid also needs to remain stable and secure with increased high levels of renewable generation. The majority of plant and all continuous and frequently operational plant will be fuelled by natural gas. Liquid fuel will only be used for start-up, maintenance, gas supply issues and emergency purposes. Start-up and emergency plant will only operate with use of low and ultra-low sulphur liquid fuel.
C_NV_01	Construction	Airbourne Noise and Groundbourne Vibration Noise	Chapter 09	<ul style="list-style-type: none"> The Proposed Development includes topographical changes, specifically a reduction in ground heights such that power plant (and associated noise sources) are recessed into the existing terrain. This reduction in ground height means that noise sensitive receptors in the vicinity of the Proposed Development will be acoustically shielded from noise emissions associated with the Proposed Development and, as such, subject to lower noise levels than they would be otherwise
C_NV_02	Construction	Airbourne Noise and Groundbourne Vibration Noise	Chapter 09	<p>The assessment of construction noise and vibration detailed above indicates no adverse effects. Nonetheless, to ensure sound and vibration levels are kept to a minimum and to reduce the risk of cumulative impacts, it is recommended that the following measures are adopted during the construction phase:</p> <ul style="list-style-type: none"> Good community relations shall be established and maintained throughout the construction process. This shall include informing residents on progress and ensuring measures are put in place to minimise noise and vibration impacts. Fixed and semi-fixed ancillary plant such as generators, compressors and pumps shall be located away from sensitive receptors wherever possible. The loading and unloading of materials shall take place away from residential properties, ideally in locations which are acoustically screened. All plant used onsite shall be regularly maintained, paying attention to the integrity of silencers and acoustic enclosures. All noise generating construction plant shall be shut down when not in use. Materials shall be handled with care and placed rather than dropped where possible. Drop heights of materials from lorries and other plant shall be kept to a minimum. Modern plant shall be selected which complies with the latest European Commission noise emission requirements. Electrical plant items (as opposed to diesel powered plant items) shall be used wherever practicable. All major compressors shall be low noise models fitted with properly lined and sealed acoustic covers. All ancillary pneumatic percussive tools would be fitted with mufflers or silencers of the type recommended by the manufacturers.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Site operations and vehicle routes shall be organised to minimise the need for reversing movements, and to take advantage of any natural acoustic screening present in the surrounding topography. No employees, subcontractors and persons employed on the site shall cause unnecessary noise from their activities e.g. excessive 'revving' of vehicle engines, music from radios, shouting and general behaviour etc. All staff inductions at the site shall include information on minimising noise and reminding them to be considerate of the nearby residents. As far as practicable, noisier activities shall be planned to take place during periods of the day which are generally considered to be less noise sensitive i.e. not particularly early or late in the day. Measures shall be put in place to ensure that employees know that minimisation of noise will be important at the Site.
C_NV_03	Construction	Airbourne Noise and Groundboune Vibration Blasting	Chapter 09	<ul style="list-style-type: none"> Blasting vibration limits will be achieved by limiting the Maximum Instantaneous Charge (MIC) based on the results of trial blasts carried out in accordance with the procedure detailed in BS6472. It is noted there may be blasting charge limits imposed as a result of the underwater acoustic assessment. If these limits differ, the more stringent limit of the two will be adopted.
C_NV_04	Construction	Airbourne Noise and Groundboune Vibration Noise Monitoring	Chapter 09	<ul style="list-style-type: none"> In addition to the above measures, a regime of noise and vibration monitoring will be undertaken during the construction phase to determine compliance with the nominated criteria and to provide a feedback mechanism so that corrective action can be taken in the event of exceedances. Approximately three to four long-term noise monitoring stations and one to two long-term vibration monitors will be set up on the Site boundary. The exact location of these stations will be determined at detailed design and will be chosen to best represent noise and / or vibration emissions in the direction of nearby receptor positions. Monitoring will continue throughout the entire construction phase, as committed to in the Construction Environmental Management Plan (CEMP). Long-term noise monitoring stations will be equipped with an SMS and / or email alert system so that site staff can be informed of potential exceedances. The results of the monitoring will be recorded and reported to relevant stakeholders in an appropriate manner and frequency, to be agreed at detailed design.
C_NV_05	Construction	Airbourne Noise and Groundboune Vibration Noise Complaints	Chapter 09	<ul style="list-style-type: none"> Any noise complaints received during the construction phase will be investigated thoroughly. The results of the investigation, including measured noise and vibration levels at the time of the complaint, onsite activities and any corrective action taken, will also be reported to relevant stakeholders.
C_NV_06	Construction	Airbourne Noise and Groundboune Vibration Blasting	Chapter 09	<ul style="list-style-type: none"> Blasting is carried out in accordance with the principles set out in bs 5607:2017 code of practice for the safe use of explosives in the construction industry. Ensuring appropriate burden to avoid over or under confinement of the charge. Accurate setting out and drilling. Appropriate charging. Appropriate stemming with appropriate material such as sized gravel or stone chippings. Using delay detonation to ensure smaller maximum instantaneous charges (mics). Using decked charges and in-hole delays. Blast monitoring to enable adjustment of subsequent charges. Designing each blast to maximize its efficiency and reduce the transmission of vibration.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures																								
				<ul style="list-style-type: none"> Avoiding the use of exposed detonating cord on the surface in order to minimise air overpressure – if detonating cord is to be used in those cases where down-the-hole initiation techniques are not possible, it should be covered with a reasonable thickness of selected overburden. A protocol for community relations with regards blasting is adopted such that prior warning of blasting operations is given to members of the public. With regards blasting induced vibration, Error! Reference source not found. details appropriate criteria in Chapter 09. It is understood that no more than one blast per day are envisaged (a prerequisite for the Error! Reference source not found. criteria to apply in Chapter 09). The blasting vibration limits will be achieved by limiting the Maximum Instantaneous Charge (MIC) used in the blasting process. To determine the MIC for the Site, a number of trial blasts will be carried out such that a site-specific scaled distance graph can be developed. Using this graph, the MIC limit required to achieve the Error! Reference source not found. criteria can be determined in accordance with the procedure detailed in BS6472. 																								
O_NV_01	Operational	Airbourne Noise and Groundbourne Vibration Noise	Chapter 09	<p>Proposed Noise Mitigation</p> <table border="1"> <thead> <tr> <th>Plant Item</th> <th>Reduction Required</th> <th>Form of Mitigation</th> </tr> </thead> <tbody> <tr> <td>Air Intake Filter House</td> <td>13 dB</td> <td>Silencers</td> </tr> <tr> <td>Stack Outlet</td> <td>35 dB</td> <td>Silencers / attenuators</td> </tr> <tr> <td>CT GSU Transformer</td> <td>10 dB</td> <td>Re-specification to a quieter model. An acoustic barrier around the units may also be required.</td> </tr> <tr> <td>Closed Cycle Cooling Water Pumps</td> <td>10 dB</td> <td>Re-specification to a quieter model.</td> </tr> <tr> <td>Closed Cycle Cooling Water Fin-Fan Coolers (24 per unit)</td> <td>8 dB</td> <td>Re-specification to larger units allowing the fans to run at lower speeds. An acoustic barrier around the units may also be required.</td> </tr> <tr> <td>Aux Boiler Stack Discharge</td> <td>25 dB</td> <td>Re-specification to a quieter model and inclusion of an attenuator.</td> </tr> <tr> <td>Sewage Treatment Package</td> <td>5 dB</td> <td>Re-specification to a quieter model.</td> </tr> </tbody> </table>	Plant Item	Reduction Required	Form of Mitigation	Air Intake Filter House	13 dB	Silencers	Stack Outlet	35 dB	Silencers / attenuators	CT GSU Transformer	10 dB	Re-specification to a quieter model. An acoustic barrier around the units may also be required.	Closed Cycle Cooling Water Pumps	10 dB	Re-specification to a quieter model.	Closed Cycle Cooling Water Fin-Fan Coolers (24 per unit)	8 dB	Re-specification to larger units allowing the fans to run at lower speeds. An acoustic barrier around the units may also be required.	Aux Boiler Stack Discharge	25 dB	Re-specification to a quieter model and inclusion of an attenuator.	Sewage Treatment Package	5 dB	Re-specification to a quieter model.
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O_NV_02	Operational	Airbourne Noise and Groundbourne Vibration Noise	Chapter 09	<ul style="list-style-type: none"> It is not clear at this stage whether acoustic barriers and / or enclosures would be required to mitigate noise emissions. To retain flexibility, a seven-metre-high barrier around the Closed Cycle Cooling Water Fin-Fan Coolers and a six-metre-high barrier around the CT GSU Transformer have been included in the 3D sound model and associated planning drawings. Whether these barriers are required and their specific dimensions will be confirmed at the detailed design stage. The 3D sound model was used to calculate operational phase sound pressure levels at the various receptor positions including the mitigation measures identified in Table 9.27, in Chapter 09. Operational phase noise emissions comply with the most stringent criteria at all residential receptor positions, with the exception of a 2 dB exceedance at receptor R1 during the night-time. 																								
O_NV_03	Operational	Airbourne Noise and Groundbourne Vibration Noise	Chapter 09	<p>However, there are various contextual factors which indicate that this exceedance may not give rise to a significant impact. They are:</p> <ul style="list-style-type: none"> The predicted sound levels are readily compliant with the NG4 daytime and evening criteria at all receptor locations. The predicted levels also comply with the night-time criteria at all other receptors apart from R1. 																								

Ref No.	Phase	Relevant Topic of the EIA	EIAR Chapter	Mitigation Measures
				<ul style="list-style-type: none"> A 2 dB exceedance is relatively small. It is often considered difficult to detect a change in sound level of less than 3 dB outside of laboratory conditions. Therefore, the levels predicted at R1 are likely to be subjectively no different from compliant levels. A sound level of 37 dB $L_{A,T}$ is relatively low, identified in NG4 as comparable to the ambient levels you would expect in an empty bedroom or in a rural setting with no wind. As discussed in Chapter 02 (Description of the Proposed Development) and Chapter 15 (Climate), the Power Plant will not operate 24/7. Therefore, sound emissions will not be constantly present. BS 8233:2014 Guidance on sound insulation and noise reduction for buildings defines acceptable internal levels within bedrooms as being 30 dB $L_{Aeq,T}$ during the night-time. It also states that a façade with an open window will provide approximately 15 dB of sound attenuation. On this basis, sound levels from the Proposed Development within the bedrooms of R1 will be 22 dB $L_{A,T}$ with windows open and even lower with windows shut. With windows shut it is highly likely that sound from the Proposed Development will be inaudible within bedrooms at R1. With windows open sound levels from the Proposed Development will be 8 dB below the BS8233 criterion. It is noted that the BS8233 criterion is applicable to anonymous sources only, however it is used in this context for reference. The criteria used are derived from sound level measurements taken in accordance with the weather condition requirements detailed in NG4 (<i>i.e.</i> low wind speeds and no rain). However, weather conditions during the survey periods indicate that these weather conditions are not typical for the area. Significantly higher ambient sound levels were measured during periods of wind and/ or rain. If sound levels during periods of wind and rain were factored into baseline levels, a different category of NG4 criteria would apply and the predicted levels would be readily compliant. There is indication that the acoustic character of the area may change due to surrounding area being zoned for marine-related industry as part of the Strategic Integrated Framework Plan (SIFP) for the Shannon Estuary which is supported by Kerry Co. Co. as identified in the Kerry CDP 2022-2028. If this were to happen, the criteria adopted for the assessment may need further consideration. NG4 makes significant reference to the application of Best Available Techniques (BAT). Significant work has been undertaken to reduce noise emissions from the Proposed Development. The mitigation measures and attenuation levels detailed in Table 9.27 in Chapter 09 and, in some cases, are at the limit of what is achievable with current technology. The noise mitigation strategy as currently proposed is considered to be an application of BAT. Prior to construction start, a commercial tendering process will be held to supply the Power Plant. The tendering process will result in a contract for a particular model of power plant. Therefore, the precise size, configuration, performance, and layout of the equipment will be finalized following the award of the contract, however this will not affect the design of the buildings or emissions as described in this EIAR. The assessment assumes the largest anticipated size of Power Plant. It is therefore possible that sound levels from the Proposed Development, once specified in detail, will be quieter than indicated in this assessment.
O_NV_04	Operational	Airbourne Noise and Groundboune Vibration Monitoring	Chapter 09	<ul style="list-style-type: none"> Furthermore, compliance with the nominated criteria will be confirmed via long term noise monitoring. Long-term monitoring will be undertaken for a period of at least 12 months from the commencement of site operations and again following any subsequent substantive change in site operations. After 12 months the need for long-term monitoring will be reviewed with the relevant authority. Indicative monitoring locations are shown in Figure F9.1, Volume 3, but may change as more detailed information becomes available. In addition to the above, short-term attended noise measurements will be taken at or near to the receptor locations identified in this chapter. Measurements will be taken and reported in accordance with the guidance provided in NG4.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Short-term measurements will take place at the commencement of site operations and again following any subsequent substantive change in site operations. They will then be repeated no less than once a year. As a minimum, measurements will comprise a 30-minute measurement at each location during the daytime, evening and nighttime (as defined in NG4). If exceedances of the predicted levels are identified by either the long-term or short-term monitoring, the causes will be thoroughly investigated, and corrective action will be taken. The Proposed Development will be licensed by the EPA under an Industrial Emissions (IE) licence, the terms and conditions of which are anticipated to be requiring a noise monitoring protocol to be adopted.
C_LV_01	Construction	Landscape and Visual Visual	Chapter 10	<p>Visual mitigation measures at construction include the following:</p> <ul style="list-style-type: none"> Existing tree protection measures during construction shall be carried out in accordance with BS 5837:2012. Minimise external lighting related to construction works. Regular cleaning or public roads to remove any track out and to reduce temporary to short-term effects on visual amenity.
O_LV_01	Operational	Landscape and Visual Embedded Mitigation	Chapter 10	<ul style="list-style-type: none"> Embedded mitigation measures form an integral, committed and deliverable part of the Proposed Development design or comprise standard construction practices. They are assumed to be implemented and are therefore factored into the determination of residual significant effects. The following embedded mitigation measures have been identified. The Proposed Development has been designed, as far as practicable, to avoid adverse effects on the landscape and views through consideration of options, appraisal and refinement. Modifications made to the design of the Proposed Development to avoid and reduce effects include mainly limiting the extent of land-take, siting of components, and, where possible, minimise effects on established vegetation and features that contribute to landscape character and visual amenity.
O_LV_02	Operational	Landscape and Visual Façade Colour Scheme	Chapter 10	<ul style="list-style-type: none"> Considering the scale of the Proposed Development, landscape mitigation can provide screening of the lower parts of the development and the area around the Site entrance but not for the upper sections of the built structures. The Proposed Development is located in a prominent setting along the shoreline of the Shannon Estuary with a low rise but undulating landscape as a backdrop, particularly when seen from the County Clare side. The principal landscape and visual mitigation measures for the Proposed Development is therefore inherent in the design of its architecture and its colour scheme. With the primary objective to minimise the visual impact of the built structures and to allow the buildings to be as unobtrusive as feasible against their backdrop, the proposed colour scheme was drawn from colours found the surrounding local landscape. The building colours consist generally of a mix between the following six main colours, which range all within a muted mid-dark grey and green spectrum. <div style="display: flex; flex-wrap: wrap; justify-content: center; gap: 10px;"> <div style="background-color: #555; color: white; padding: 5px; margin: 2px;">RAL 7043</div> <div style="background-color: #333; color: white; padding: 5px; margin: 2px;">RAL 6020</div> <div style="background-color: #444; color: white; padding: 5px; margin: 2px;">RAL 9023</div> <div style="background-color: #444; color: white; padding: 5px; margin: 2px;">RAL 6006</div> <div style="background-color: #333; color: white; padding: 5px; margin: 2px;">RAL 6003</div> <div style="background-color: #444; color: white; padding: 5px; margin: 2px;">RAL 6011</div> </div>
O_LV_03	Operational	Landscape and Visual Lighting	Chapter 10	<p>Mitigation measures to reduce visual effects in relation to additional lighting include the following:</p> <ul style="list-style-type: none"> Lighting will be kept to essential locations only, with the position and direction of lighting being designed to minimise intrusion and disturbance to adjacent areas. Use of full cut-off lanterns are proposed to minimise light spillage and upward escape of light onto adjacent areas.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Lighting will be minimised in terms of number of lights and the power of the lights (lux level). Directional lighting, facing and located away from any surrounding vegetation. Lighting will be turned off where possible when not in use except to meet the minimum requirements for Health and Safety (refer to night-time photomontages for Viewpoints / Photomontages 8 and 12 and the differences between 'no additional lighting' and 'all lights turned on').
O_LV_04	Operational	Landscape and Visual Landscape	Chapter 10	<ul style="list-style-type: none"> Landscape mitigation measures have been developed in order to screen the lower sections of the proposed range of buildings and the proposed access road to help the integration into the landscape. Landscape mitigation will be implemented in the first planting season after construction works are complete. The intended screening to be achieved by planting proposals will establish over time as the vegetation grows and matures. <p>The objectives of the landscape design are to:</p> <ul style="list-style-type: none"> Screen the Site from the public road and adjacent property. Preserve the existing landscape as far as feasible. Maximise pervious surfacing. Provide natural habitat for animals to aim for 'no net loss of habitat'. <p>The specific strategies are described as below:</p> <ul style="list-style-type: none"> At the location where the main access road connected to the public road, there are woodland mix of shrubs and trees. There are hedgerows of trees from south-west to north-east along the property line. The existing landscape in the north-west part of the Site (out of the 10 m offset from the mass grading area) is retained and groups of trees are proposed there. To protect water quality of the stream near the Site entry, there is a 5-10 m buffer of retained vegetation along the stream. The area of Power Plant and utility metering are surfaced with gravel when there is no driveway and equipment. The other disturbed are seeded with native grass. To provide more diverse habitat for local animals like badgers and birds, there is alternate bunches of trees and shrubs along entry road. Groups of trees are planting in the retained area in the north-west part of the Site. The proposed planting species are native and could provide ecological service.
C_TT_01	Construction	Traffic and Transport - Construction Traffic Management Plan	Chapter 11	A Construction Traffic Management Plan (CTMP) will be prepared by the appointed contractor and agreed in writing with Kerry Co. Co. roads department.
C_TT_02	Construction	Traffic and Transport - Traffic	Chapter 11	<p>The following list of measures would be adopted to minimise the impacts associated with the construction phase upon the peak periods on the surrounding road network:</p> <ul style="list-style-type: none"> Logistics manager will be put in place. Traffic control will be in place for all vehicles entering and exiting the Site. Parking will be allowed only in designated parking areas onsite. Segregated pedestrian walkways will be introduced. Public pedestrian access will be restricted throughout the proposed works. Access to the Site will be strictly controlled with all personnel being required to have a Safe Pass and to have undergone a specific Sisk Site Safety Induction before being allowed into the site.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> Traffic on the Site will remain on hardcore areas wherever possible. Where this is unavoidable, traffic exiting the Site would go through a wheel wash. All plant and equipment will be fitted with flashing amber warning lamps and hazard lights and will be required to have reversing alarms for operations within the work site. The need for reversing vehicles, will be reduced by introduction of one-way system. Speed limit of 15 km/h will be put in place on the construction site. Safe working procedures will be followed by plant and vehicles required to enter and leave the construction site into trafficked lanes. All workers will be required to wear high visibility reflective protective clothing. Site foreman and supervisors will be in two-way communication with each other and the traffic controllers for the duration of the work shift. The Construction Health and Safety Plan will set out how health and safety is to be managed during the construction phase. Site equipment within the work area that have an impact on any emergency services requiring access to an incident will be cleared from the area as quickly as necessary. HGV trips will arrive and depart the site at a uniform rate throughout the day, to avoid pressure on the morning and evening peak hour periods. Further to this it is proposed that as per the previous application <i>'No HGV traffic will be allowed pass the existing school on the Coast Road at Tarbert for 20 minutes before and 10 minutes after the opening and closing times of the school. The elimination of passing HGV traffic during these time periods will ensure the continued safe delivery and collection of children at the school.'</i>
O_TT_01	Operational	Traffic and Transport - Mobility Management Plan	Chapter 11	<ul style="list-style-type: none"> A Mobility Management Plan (MMP) has been prepared by AECOM to assist with promoting the use of more sustainable modes of transport to staff at the Proposed Development.
C_CH_1	Construction	Cultural Heritage Pre-construction environmental surveys	Chapter 12	<ul style="list-style-type: none"> Pre-construction environmental surveys will be undertaken in advance of the enabling works. An extensive programme of pre-development licensed archaeological testing will be undertaken in the areas of the Site which will be subject to development. It is anticipated that the archaeological mitigation programme will commence prior to the start of the main construction works pre enabling works. During Phase 1 (prior to the enabling works as soon as access is available or during if necessary) – all archaeological sites and areas that require preservation by record will be investigated. This will also determine the scope of further mitigation works. A General Watching Brief (GWB) will be carried out for ground works, such as utility diversions, road diversions and ecology works. In line with the recommendations for mitigation outlined in the 2008 testing report (Long and O'Malley, 2009). Phase 2 will take place during later enabling works and in advance of and concurrent with construction) – the GWB will be undertaken in all other areas where it is required, in particular in areas which have not been subject to previous archaeological testing. The construction of the stormwater Outfall Pipe and other works on the foreshore will also be archaeologically monitored under licence by a suitably qualified and experienced maritime archaeologist. Phase 3, a post-excavation assessment will be undertaken in accordance with DCHG / NMS advice, followed by an appropriate scheme of detailed analysis and reporting. Phase 3 will commence as soon as practicable following completion of the main investigative works.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
C_CH_2	Construction	Cultural Heritage Terrestrial Archaeological Assets	Chapter 12	<ul style="list-style-type: none"> There is one archaeological asset located within the boundary of the Site. This is the ringfort (KE003-004) / CH10 which is located on the north-east boundary. The 2007 EIS recommended that this asset remain in situ within the boundaries of the previous proposed development with a buffer zone created around it. This recommendation was included as Condition 32 (f) of Planning Permission (08.PA0002). A fence, located 30 m from the asset, will be included in the current Proposed Development as embedded mitigation. During the construction phase procedures will be adopted to protect this asset. These procedures could include physically cordoning the asset off from works and holding toolbox talks to inform construction supervision staff and site operatives of the requirements.
C_CH_3	Construction	Cultural Heritage Marine Archaeological Assets	Chapter 12	<ul style="list-style-type: none"> A site of archaeological potential was recorded during the marine geophysical survey in 2007. The location of the submerged anomaly lies some 815 m to the north-east of the Proposed Development and is unlikely to be directly impacted by works during construction. Condition 32 (d) of previous Planning Permission (08.PA0002) which relates to this site of archaeological potential required a seabed impact exclusion zone of 50 m to be maintained around the anomaly to ensure it is not impacted upon. A survey did detect eight anomalous features (A1-8) all of which are located within the jetty footprint associated with a previous planning application A subsequent marine geophysical survey was conducted in February 2024, of the Stormwater Outfall Pipe for possible archaeological remains whilst also inspect and hopefully provide further details on and identification for the side-scan anomaly (SS8) detected in the previous geophysical survey. This anomaly was not detected although survey in the area was hampered by the presence of lobster pots which distorted results. A8 is located 390 m to the north-east of the Outfall Pipe and is unlikely to be directly impacted by works during construction. However, it is recommended that a seabed impact exclusion zone of 50 m be maintained around the anomaly to ensure it is not impacted upon.
C_CH_4	Construction	Cultural Heritage	Chapter 12	<ul style="list-style-type: none"> Areas of excavation around the known archaeological sites and areas will include a 5 m buffer zone as a minimum between the edge of the site and any archaeological features. Should previously unknown archaeological features be identified then the excavation area will be expanded to ensure the 5 m buffer zone is maintained. It is noted that the archaeological deposits within Area 6 Post-Medieval Habitation site and Area 11 Enclosure are particularly close to the surface and are vulnerable to disturbance. A topographic survey will be carried out in advance of archaeological excavations to record potentially significant anomalies in the ground surface which could otherwise be damaged by plant moving over the area. The removal of topsoil in parts of Areas 6 Post-Medieval Habitation site and Area 11 Enclosure will be performed by mini-digger to reduce the potential of damage caused by plant tracking over the shallow archaeological features. A photographic survey and written description of CH6 Well will be carried out in advance of groundworks within the vicinity of this asset. The dismantling of the well will be carried out in an orderly fashion under the supervision of a suitably qualified archaeologist. In the event of unexpected discovery of potential archaeological material, the works will be stopped, and the Contractor will immediately advise the Employers Representatives. The Contractor will support the full recognition of, and proper excavation and recording of all archaeological soils, features, finds and deposits. If previously not recorded archaeological material is found during monitoring, then consultations must be held with a certified Archaeologist and the National Monuments Service (NMS) with regard to any necessary mitigation measures. These measures may involve excavation of the archaeology.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
				<ul style="list-style-type: none"> A method statement and licence application for monitoring at site will be submitted to the National Monuments Service (NMS) and the National Museum of Ireland (NMI) and the Archaeologist. In order to comply with the terms of the monitoring licence a fully illustrated report will be produced for each site, setting out the results of the monitoring works. These reports will be submitted to the NMS, the NMI and to the Archaeologists. Works will be planned and managed to prevent any damage to local structures.
C_MAD_1	Construction	Major Accidents and Disasters CEMP	Chapter 14	<ul style="list-style-type: none"> The CEMP (Appendix A2.3) will be updated by the Contractor in accordance with any conditions of planning, and similar plans developed for eventual demolition activities.
C_MAD_2	Construction & Operational	Major Accidents and Disasters Fuels and Chemicals	Chapter 14	<ul style="list-style-type: none"> The design, construction, and operation of the Proposed Development will be in accordance with international, national and established industry codes, standards and practice, such as the specification of pipework materials, design of structures etc. A detailed chemical inventory and risk assessments for all materials handled on-site will be produced in accordance with the requirements of the Chemical Agents legislation. All fuels and chemicals stored on-site will be subject to the Safety, Health and Welfare at Work (Chemical Agents) Regulations, as amended by S.I. No. 231/2021 as well as compliance with the requirements of Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). The Proposed Development will comply with the requirements of all relevant health, safety and environmental legislation including COMAH, which requires operators to take all measures necessary to prevent major accidents and to ensure risks are minimised to ALARP.
O_MAD_1	Operational	Major Accidents and Disasters	Chapter 14	<ul style="list-style-type: none"> Regular maintenance and inspection of all facilities will be carried out to reduce the potential for equipment failures which could lead to a loss of containment, e.g. tanks will be on a formal inspection register. A firewater retention pond is included in the Proposed Development and sized according to the EPA <i>Guidance on Retention Requirements for Firewater Runoff (2019)</i>, as the most effective and suitable measure for retaining firewater. The retention pond will be rendered impermeable by use of an appropriate liner, and integrity-tested in line with the requirements of the Site's licence. All drainage will pass through the retention pond. An automatic shut-off valve linked to the site's fire detection system will be installed on the drainage outlet point. Secondary fuel (distillate oil) will be stored with tertiary containment. Bunding and associated pipework will be designed in accordance with EPA Guidance Note on Storage and Transfer of Materials for Scheduled Activities. The secondary containment (primary bund) design will allow the greater of 110% of the largest tank within the bund or 25% of the total volume of substance within the bund, whichever is the larger. A second bund (tertiary containment) will be built around the primary bund and will contain any spillage should the primary bund fail or be over-topped by a spillage.
O_MAD_2	Operational	Major Accidents and Disasters Environment Management System	Chapter 14	<p>The Environment Management System (EMS) for the Proposed Development will set out the requirements and procedures required to ensure that the Proposed Development is operating to appropriate standards. Such Procedures include:</p> <ul style="list-style-type: none"> Hazardous and polluting liquids such as transformer oils will be stored in tanks located in bunds. Distillate Oil unloading bays will be designed to contain spillages. Storage tank level indicators and oil detection sensors in bunds will be provided with alarms. Class 1 hydrocarbon interceptors will be provided in the surface water drainage system. Measures to isolate the surface water drainage system will be provided to prevent discharge of contaminated water.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
O_MAD_3	Operational	Major Accidents and Disasters Site Emergency Response Plan (ERP)	Chapter 14	<ul style="list-style-type: none"> A Site Emergency Response Plan (ERP) will be developed in relation to the Proposed Development in accordance with legislative requirements including COMAH and the IE licence, which will include a fire strategy and appropriate training procedures. Procedures will be in place to clearly detail the responsibilities, actions and communication channels for operational staff and personnel on how to deal with emergencies should they occur. Staff will also receive the level of training required for their role and position. This will include dealing with events such as fires, spillages, flooding etc. Such measures will be included in the site operating and management system and regulated by the EPA through the IE licence. The ERP will contain detailed plans for the response to emergencies such as loss of containment of Distillate oil, fires and severe weather events. A stock of emergency equipment such as spill kits will be maintained on Site in particular around the chemical storage areas. The local Fire and Rescue Service and other key stakeholders will be consulted to provide an input to the development of emergency plans and potentially engage with desktop and live emergency training exercises. The Emergency Response plans and systems are required as part of COMAH for the Site, to the satisfaction of the HSA.
C_Clim_1	Construction	Climate GHG Emissions / Energy Consumption	Chapter 15	<ul style="list-style-type: none"> To reduce fuel deliveries, sizeable sized diesel tanks would be held onsite. Site personnel will be encouraged to use green transport options, including car-pooling, public transport, walking and cycling. Material transport associated with the project will be assessed in order to reduce associated carbon expenditure. The Contractor will engage the supply chain to reduce the number of vehicle movements relating to site material. Vehicles and plant with low exhaust emissions will be used and will be serviced regularly. Engines will not be left running unnecessarily. In addition, vehicles will be monitored entering the site for noticeable exhaust emissions and site security personnel will have the power to ban offending vehicles from the site. Energy efficiency measures will be installed in all offices and drying rooms; sprung door closers in external doors, awareness notices to save energy, timers on heaters and boilers, passive infrared (or similar) sensors for lighting where possible and supervision to switch off other lights, computers, etc. at the end of the day. Energy consumption will be logged and monitored through an electrical meter.
C_Clim_2	Construction	Climate GHG Emissions / Materials	Chapter 15	<ul style="list-style-type: none"> Waste generated during the construction phase will be carefully managed according to the accepted waste hierarchy which gives precedence to prevention, minimisation, reuse and recycling over disposal with energy recovery and finally disposal to landfill. Reuse of excavated soil where possible, any that is unsuitable for engineering will be used for landscaping. Locally sourced materials, purchasing recycled materials, sustainably sourced certified timber; Purchasing of materials for just-in-time delivery. Designation of separate storage areas for different types of waste, in order to maximise the reuse and recycling potential of the waste.
C_Clim_3	Construction	Climate GHG Emissions / Other statutory requirements	Chapter 15	<ul style="list-style-type: none"> Development of the CEMP prior to construction. Resource and Waste Management Plan. Undertaking construction works in accordance with all legal, regulatory and licence conditions, including the Safety, Health and Welfare at Work (Construction) Regulations, NSAI Construction Standards and the Construction Industry Federations Construction Standard Operating Procedures.

Ref No.	Phase	Relevant Topic of the EIA	EIA Chapter	Mitigation Measures
C_Clim_4	Construction	Climate Climate Change Resilience	Chapter 15	<p>Full details of the embedded design measures that reduce the vulnerability of the Proposed Development are detailed within the CEMP and other discipline assessments. A summary of these measures includes:</p> <ul style="list-style-type: none"> • An outline emergency response plan and procedure for environmental incidents such as flooding or storms. • Storage of topsoil and other construction materials to protect against high rainfall and flooding events, or sea level rise. • Suitable storage and bunding of pollutants to protect from high rainfall events or sea level rise. • Laydown and welfare areas would be laid with permeable membranes to protect the Site from high rainfall and flooding events or sea level rise.
C_Clim_5	Construction & Operational	Climate Lifecycle GHG Impact Mitigation	Chapter 15	<p>To reduce carbon emissions during the construction and operation phase, embedded controls and mitigation measures as outlined in Chapter 02 (Description of the Proposed Development) include:</p> <ul style="list-style-type: none"> • Contractor to monitor weather forecasts and plan works accordingly, protecting workers and resources from any extreme weather conditions. • Detailed design of air conditioning units for offices would include an allowance for future rise in ambient temperature. • All buildings would be designed to Irish standards and specifications. • Buildings would utilise water efficient fixtures. • The FRA considers climate change considerations of the 'mid-range' and 'high end' future scenarios including increases in extreme rainfall, flood flow and flash flood times. • Development footprint avoidance of Flood Zones A and B. • Finished floor level of the Substation to be constructed at the 0.1% AEP level plus a freeboard allowance of 600 mm. Finished floor level of the remainder of the facility to be constructed at the 1% AEP level plus a freeboard allowances of 600 mm. • Use of attenuation ponds to hold peak discharges from storm events to reduce flash flooding onsite. These would be built in accordance with the SuDS manual and designed for a 1 in 100-year event plus a 20% allowance for climate change. • Existing tree protection measures during construction shall be carried out in accordance with BS 5837:2012, with a 5-10 m buffer of retained vegetation along the stream. • The Power Plant offers very low minimum stable generation compared to other generators. This will allow the system operator to turn other less efficient generators off while keeping the Power Plant running at minimum generation to ensure grid stability during periods of high wind generation. • The Power Plant shall not operate in less efficient Open Cycle mode. • A closed loop air cooled steam condenser shall be used for the Power Plant. This will result in significantly less water being consumed for operation when compared to other possible cooling options. • The Site layout is compact and efficient resulting in a smaller area being developed and therefore reduced release of carbon from terrestrial stocks such as soil and vegetation. • The main site platform is at +18 m OD resulting in minimised cut and fill and therefore minimised terrestrial carbon stocks being released. • Diesel Firewater Pump is operated in emergency conditions only, and apart from periodic testing is not run during normal operations. • Black-start Diesel Generator used for initial start-up only and apart from testing would not be running during normal operations. • Auxiliary Boiler is only operated when all CTG / HRSG Trains are not in operation to facilitate a unit start.

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				<ul style="list-style-type: none"> Other design alternatives were considered (refer to Chapter 03 (Need and Consideration of Alternatives)) which would have had higher CO2 footprint.
O_Clim_1	Operational	Climate Climate Change Resilience	Chapter 15	<ul style="list-style-type: none"> Electrical connections would be buried underground, insulating against overheating in times of heatwaves. The Proposed Development would be designed with any specific drainage terms and conditions of the IE Licence, as determined by the EPA, and associated planning conditions, to protect against high rainfall events or sea level rise. Drainage will be designed in line with the principles of SUDS for a 1 in 100-year flood event plus an uplift of 20% contingency to account for any influence of climate change. Use of attenuation ponds to hold peak discharges from storm events to reduce flash flooding onsite. These would be built in accordance with the SuDS manual and designed for a 1 in 100-year event plus a 20% allowance for climate change. The Power Plant is designed to operate over a large range of ambient conditions and the plant efficiency difference is less than 1% from high to low. Temperature changes would not have a noticeable impact. The efficiency impact would also be less when the plant is operating at lower loads. The Power Plant utilises air cooled heat exchangers rather than use of cooling water to reduce water demand. Finished floor level of the Substation to be constructed at the 0.1% AEP level plus a freeboard allowance of 600 mm. Finished floor level of the remainder of the facility to be constructed at the 1% AEP level plus a freeboard allowances of 600 mm.
O_Clim_2	Operational	Climate GHG Emissions	Chapter 15	<ul style="list-style-type: none"> The operation of the Proposed Development will lead to unavoidable GHG emissions. Operations will therefore be undertaken in accordance with all legal, regulatory and licence conditions to minimise the GHG impact. The role of the Proposed Development in displacing higher carbon intensity, fossil-fuelled energy sources must also be considered when assessing the overall GHG impact.
O_Clim_3	Operational	Climate Climate Change Resilience	Chapter 15	<ul style="list-style-type: none"> Monitoring will be undertaken in accordance with all legal, regulatory and licence conditions.
C_WM_1	Construction	Waste Management RWMP	Chapter 16	<ul style="list-style-type: none"> The Contractor will be required to develop a detailed CEMP in advance of the works commencing. The development of the detailed CEMP shall be in conjunction with the CEMP included in the planning application submission. The RWMP and CEMP include design and construction measures that apply the waste hierarchy principles and minimise effects on waste. These include: <ul style="list-style-type: none"> 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 Proposed Development, 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
C_WM_2	Construction	Waste Management RWMP	Chapter 16	<ul style="list-style-type: none"> Contractors will implement RWMP in accordance with the EPA <i>Best Practice Guidelines on the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects</i> (EPA, 2021b).
C_WM_3	Construction	Waste Management	Chapter 16	<ul style="list-style-type: none"> 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 off-site

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				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.
O_WM_1	Operational	Waste Management	Chapter 16	<ul style="list-style-type: none"> • Transboundary shipments of waste will be carried out in accordance with the Basel Convention and will require approvals from the competent authorities in Ireland (Dublin City Council) and the receiving country. • This may be required in the case of small quantities of hazardous waste for which there is no suitable management route in Ireland (e.g. waste chemicals). • Any impacts associated with the management of waste at waste management facilities in countries outside of Ireland are not included in the scope of this assessment, since it is assumed that they will have been assessed and (where necessary) mitigated as part of the planning and permitting of these facilities.
C_MA_1	Construction	Material Assets Utilities	Chapter 17	<ul style="list-style-type: none"> • 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 Contractor will be obliged to put measures in place during the construction phase to ensure that there are no interruptions to existing services and all services and utilities are maintained unless this has been agreed in advance with the relevant service provider and local authority. When service suspensions are required during the construction phase, reasonable prior notice will be given to the residents in the area. The disruption to services or outages will be carefully planned so the duration is minimised. The timing of local domestic connections will be addressed between the Contractor and the local community at the detailed design stage. • All potential temporary connections will be agreed in advance with the relevant service provider. • 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 Proposed Development will incorporate water efficiency measures such as collection of grey water (for wheel washing activities) to minimise water consumption as far as possible. • Periodic water quality monitoring at point of supply. • All water supply will be maintained and fitted with stop taps. • Water meters will be installed to monitor all water consumption for the duration of the construction phase. • All offices and drying rooms energy efficiency measures will include: installation of sprung door closers in external doors, awareness notices to save energy, timers on heaters and boilers, sensors for lighting where possible and supervision to switch off other lights, computers, etc at the end of the day.
O_MA_1	Operational	Material Assets Utilities	Chapter 17	<ul style="list-style-type: none"> • The water supply will be tested to the satisfaction of the local authority and Uisce Éireann prior to the connection to the public potable water. • Potable water during the operational phase will be regulated and monitored under the IE licence.

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				<ul style="list-style-type: none"> • Routine maintenance will be carried out in accordance with the maintenance procedures provided by the Contractor and manufacturer. • The Proposed Development (Power Plant) will be required to undertake an annual inspection, as per the manufacturer's requirements. During this time the Proposed Development will be shut down to allow the inspection to be completed (by the manufacturer's personnel). • Emissions during the operational phase will be regulated and monitored under the IE licence.
D_MA_1	Decommissioning	Material Assets	Chapter 17	<ul style="list-style-type: none"> • Prior to any decommissioning, the IE licence will require a Decommissioning Plan (including a Decommissioning Environmental Management Plan) be produced and agreed with the EPA as a routine part of the Site closure and licence surrender process. • A Closure, Remediation, Aftercare Management Plan (CRAMP) will be prepared and agreed with the EPA. • The CRAMP will consider the potential environmental risks at the Site and provide guidance and appropriate mitigation procedures as necessary, to minimise risk.

