White Hill Wind Farm Electricity Substation & Electricity Line

Environmental Impact Assessment Report

Annex 1.9: Schedule of Mitigation Measures

White Hill Wind Limited

Galetech Energy Services

Clondargan, Stradone, Co. Cavan Ireland

Telephone +353 (0)49 555 5050

www.galetechenergyservices.com

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1.0 Introduction

Galetech Energy Services (GES) has prepared this collated and consolidated Schedule of Mitigation Measures in respect of the White Hill Wind Farm Electricity Substation & Electricity Line ('the project').

The project site is located in rural County Kilkenny and County Carlow, approximately 11 kilometres (km) northeast of Kilkenny City, c. 15km southwest of Carlow Town, c. 3km west of Muine Bheag and c. 1km north of Paulstown. In summary, the project comprises the following main components:-

- A 110kV 'loop-in/loop-out' electricity substation;
- Approximately 320 metres (m) of 110kV underground electricity line between the electricity substation and the Kellis-Kilkenny overhead transmission line and the provision of 2 no. interface masts;
- An electrical control unit at the permitted White Hill Wind Farm site;
- Approximately 8.8km of underground electricity line between the electricity substation and the electrical control unit; and,
- All associated and ancillary site development, access, excavation, construction, landscaping and reinstatement works, including provision of site drainage infrastructure.

The project site traverses the administrative boundary between counties Kilkenny and Carlow; with the electricity substation and c. 3.3km of the underground electricity line located in County Kilkenny and c. 5.5km of the underground electricity line and the electrical control unit located in County Carlow.

1.1 Purpose of this Report

This report has been prepared to provide a concise document of all mitigation measures proposed within the Environmental Impact Assessment Report (EIAR).

Article 8(a)(4) of the Environmental Impact Assessment (EIA) Directive 2014/52/EU states:-

> *'...Member States shall ensure that the features of the project and/or measures envisaged to avoid, prevent or reduce and, if possible, offset significant adverse effects on the environment are implemented by the developer...'*

This document therefore provides a list of all mitigation measures proposed within **Volume I** of the EIAR (**Section 1.3** below) which will be implemented during the pre-construction, construction and operational phases of the project.

1.2 Implementation of Mitigation Measures

White Hill Wind Limited ('the Developer') can confirm that all mitigation measures outlined below, in addition to the measures inherent to the design of the project as described at **Chapter 3**, will be implemented except as may be required in order to comply with conditions of consent.

It should be noted that a number of the below measures will be supervised and overseen by personnel who have not yet been appointed. Such personnel will include:-

- Project Supervisor for the Construction Stage (PSCS);
- Civil Works Contractor;
- Electrical Works Contractor;
- Ecological Clerk of Works;

- Environmental Manager;
- Geotechnical Clerk of Works; and,
- Archaeological Clerk of Works.

Prior to the commencement of development, personnel will be appointed to each of the above roles; while the Developer will have ultimate responsibility for the implementation of all mitigation measures.

1.3 Environmental Impact Assessment Report (EIAR) Mitigation Measures

Environmental Impact Assessment Report – Schedule of Mitigation Measures		
Topic	**Mitigation Measure**	**Phase of Development for Implementation**
Population & Human Health	A series of measures has been agreed with the involved landowners regarding the management of agricultural activities during the construction phase and will be implemented in full.	Construction
Biodiversity	To mitigate likely effects during the construction phase, best practice construction methods will be implemented in order to prevent water (surface water and groundwater) pollution. Good practice measures will be applied in relation to pollution risk, sediment management and management of surface runoff rates and volumes.	Construction
Biodiversity	While no significant effects are considered likely, as a precaution, specific measures to prevent any effects on freshwater pearl mussel are included, following the design of Altmüller and Dettmer (2006). These measures will also be beneficial for any other downstream aquatic habitat and species.	Construction
Biodiversity	All personnel working on the project will be responsible for the environmental control of their work and will perform their duties in accordance with the requirements and procedures of the CEMP.	Construction
Biodiversity	During the construction phase, all works associated with the construction of the project will be undertaken in accordance with the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015). Any groundwater encountered will be managed and treated in accordance with CIRIA C750, 'Groundwater control: design and practice' (CIRIA, 2016).	Construction
Biodiversity	To avoid widespread disturbance to habitats, access within the project will be restricted to the footprint of the proposed works corridor and no access between different parts of the project will be permitted, except via the proposed works corridor. An Ecological Clerk of Works (ECoW) will be employed throughout the construction phase to ensure that construction activities do not encroach unnecessarily into any important habitats.	Construction
Biodiversity	During dry weather (i.e. no rainfall), dust generated will be managed using dust suppression bowsers. This will avoid damaging tree lines and hedgerows, as well as acidic habitats at Whitehall Quarries pNHA.	Construction
Biodiversity	The following will be implemented to avoid the accidental spread of any invasive or non-native species:- • An invasive species management plan will be developed and implemented. This will include the general prevention and containment measures and species-specific treatment measures below; and, • An Ecological Clerk of Works will be employed for the duration of the construction period to make contractors aware of any invasive and non-native species sensitivities of the project and to undertake pre-construction surveys, enforcing any exclusion zones and mitigation measures as required. <u>General Prevention Measures</u> • Use of toolbox talks as part of site introduction to workers, including what to look out for and what	Construction

	procedures to follow if invasive species are observed; • Signs will be used to warn workers of invasive species contamination; • Only planting and sowing of native species if any reinstatement works are required or where invasive plant species are physically removed; • Unwanted material contaminated with invasive species will be transported off-site by an appropriate licenced waste contractor and disposed of at a suitably licenced facility (NRA, 2010); and, • Good hygiene practices will be adhered to including the removal of build-up of soil on equipment; keeping equipment clean; washing vehicles exiting the site using a pressure washer to prevent the transport of seeds; storing wastewater from washing facilities securely and treating to prevent spread of invasive species; checking footwear and clothing of workers for seeds, fruits or other viable material before leaving the site; any plant material arising from cleaning equipment, footwear and clothing will be carefully disposed of following (NRA, 2010) guidelines in such a manner not to cause the spread of invasive species. <u>General Containment Measures</u> • A pre-construction walkover survey of the project will be undertaken during the growing season (April to August). This will search for invasive and non-native species, which could change over time. The extent of invasive plant species will be physically marked out if there have been any changes since baseline surveys; and, • If any are identified, then appropriate exclusion zone(s) will be implemented. A 1m buffer (except for the named species below) will be used to cordon off invasive species outside the works footprint. <u>Himalayan balsam</u> The following treatment options are recommended by TII (2020) guidance. *Chemical control* Chemical control of Himalayan balsam is possible and the use of glyphosate-based products can provide a very successful outcome. As the plant is an annual and the roots are extremely short, it is not necessary to hold off spraying until after flowering, as with deep rooted, rhizomatous and perennial species. Treatment in late May or early June will provide a good kill of treated plants but seeds from the previous season will germinate to replace the treated individuals and further spraying will be required in August or September. Since the seeds can remain dormant for more than one year, spraying, as in the first year will be required in the subsequent season. In Years 3 and 4, if no seeds have been deposited in the area, few plants should survive but monitoring and localised retreatment will be required. If found near a watercourse crossing, bioactive-formulation glyphosate-based herbicide treatment is suitable. *Physical control* Mechanical control of Himalayan balsam is only likely to be effective where good access is available and the ground is smooth or level enough to permit either mowing or cutting. Where accessible, plants can be cut, mown	

	or strimmed back to ground level before flowering in June. Do not cut earlier as this promotes greater seed production in plants that regrow. Unless the plant is cut to below the lowest node, it will re-sprout. Regular mowing will control the plant, provided the frequency of mowing is regular enough to prevent sprouting and flower formation. This should be repeated annually until complete control is achieved. As the plants are very shallow-rooted, they can also be easily pulled from the ground by hand. Himalayan balsam has no spines, thorns or stinging cells and, hence, is not a danger to those doing the pulling, although it is always recommended to wear gloves as brambles and nettles commonly grow amongst the stands of Himalayan balsam plants. This control method, commonly referred to as 'balsam bashing', should be conducted in late April or early May when the plants are circa 1 m high. This puts less strain on the back of those pulling the plants. The pulled plants should be broken to discourage flowering, which can occur even with plants that have been removed from the ground. The broken plants can be placed in piles to rot naturally. Because seeds from the previous season will germinate and produce new plants following hand pulling in April or May, the exercise will need to be repeated later in the season, probably in August. As with herbicide spraying, hand pulling will be required the following year to account for the fact that seeds are capable of surviving for at least one year. Monitoring and localised hand pulling should be conducted for the following two years or as monitoring dictates. Vegetative material can be disposed of by composting provided the compost will not be disturbed for a minimum of two years. Material may also be disposed of to a licensed landfill or incineration facility, or the material could be disposed of by shallow or deep burial. <u>Montbretia</u> The following treatment options are recommended by NRA (2010) guidance. *Chemical control* Montbretia can be treated with herbicide during the active growing season. Due to the potential for re-infestation from seeds, corms and/or rhizome fragments, regular monitoring and follow-up treatment, as dictated by the monitoring, will be required over several years. If found near a watercourse crossing, similar bioactive-formulation glyphosate-based herbicide treatment is recommended as for Japanese knotweed (see above). *Physical control* Physical control of montbretia is difficult as individual corms easily break from their chains and can result in ready re-infestation or further spread. Where infestations are limited in extent, the entire stand can be excavated and buried or disposed of to a licensed landfill or incineration facility under licence. The most effective time to remove montbretia is before the flowering/seeding season. The corms are very hardy and are not suitable for composting. Due to the potential for re-infestation from corms, regular follow-up will be required over several years to deal with any re-growth. <u>Salmonberry</u> In the event of interaction of works with salmonberry, excavation of the entire root system is recommended, in addition to the general prevent and containment measures outlined earlier. This must be done before the plants' seeds ripen in autumn and plant matter from this process can be disposed of at a licenced landfill site or may be buried on-site up to a depth of >2 m.	

	Snowberry As snowberry is present within hedgerows in third-party lands, the primary means of preventing spread will be avoidance. In the event of interaction of works with snowberry, excavation of the entire root system is recommended, in addition to the general prevent and containment measures outlined earlier. This must be done before the plants' seeds ripen in autumn and plant matter from this process can be disposed of at a licenced landfill site or may be buried on-site up to a depth of >2m.	
Biodiversity	To avoid widespread disturbance to birds, access will be restricted to the footprint of the proposed works corridor.	Construction
Biodiversity	The following will be implemented to reduce the possibility of damage and destruction (and disturbance to sensitive species) to occupied bird nests:- • if site clearance and construction activities are required to take place during the main breeding bird season, pre-commencement survey work will be undertaken to ensure that nest destruction and disturbance is avoided; • once vegetation has been removed from the works corridor, these areas will be retained in a condition that limits suitability for nesting birds for the remainder of the construction phase e.g. cover for ground nesting species will be made unsuitable for cutting vegetation or tracking over with an excavator; and, • a suitably experienced Ecological Clerk of Works will be employed for the duration of the construction period to make contractors aware of the ornithological sensitivities of the project and to undertake surveys for nesting birds throughout the construction period, and enforcing exclusion areas, as required.	Construction
Biodiversity	Measures proposed above will prevent deterioration of water quality and adverse effects on mammals relying on downstream habitats, such as otter. Habitat features important for mammals will be retained (e.g. hedgerows and treelines). A pre-construction walkover survey of the project will be undertaken. This will search for mammal resting/breeding places which could change over time. If any are identified, then appropriate exclusion zone(s) will be implemented and construction activities timed to avoid sensitive periods, such as the breeding season or hibernation, as relevant. The following will be implemented to reduce the possibility of direct and indirect effects on mammals:- • limiting constructions works to daylight hours; • providing exit points for any excavations (e.g. escape planks or spoil runs) so mammals do not become trapped; and, • if any threatened or legally protected mammals are recorded during the pre-construction walkover survey, the Ecological Clerk of Works make contractors aware of the mammalian sensitivities of the project and to undertake surveys for breeding or resting mammals throughout the construction period, enforcing exclusion areas as required. These are 50m for red squirrel, 100m for pine marten, 150m for otter	Construction

	and 50m for badger. If in the unlikely event that exclusion zones cannot be implemented, advice will be sought from NPWS, and appropriate mitigation and compensation measures will be put in place and an application will be made to NPWS for a derogation licence if required.	
Biodiversity	While some hedgerows and treelines will be lost due to construction, the majority of these will be replaced in situ, so there will be no net loss of commuting and foraging routes for bats.	Construction
Biodiversity	A precautionary working method statement (PWMS) will be prepared prior to felling any trees to ensure work methods and timings avoid any effects on bats. This will detail how tree felling will be carried out to avoid any effects to bats. Soft-felling will be carried out in suitable weather conditions and at appropriate times of year (other than winter when they are hibernating). Briefly, this involves the following:- • removal of the tree in sections, starting with the top branches and working down the trunk avoiding cutting through cavities; • lowering of any sections with potential roost features with care, positioning them on the ground with potential entrances to roosts facing upwards to allow bats to exit the roost; and • leaving these sections in place for at least 24-hours in suitable weather. During early-morning and evening working hours, the electricity substation and temporary construction compound and electrical control unit compound will be illuminated to enable construction activities. To avoid any effects on bats, cowled lighting will be used, directing light inwards, and away from hedgerows, to minimise disturbance of any commuting or foraging bats. Appropriate luminaire specifications will also be used for lighting at the substation as outlined in BCT (2023). These include:- • All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used; • LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability; • A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component; • Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012); • Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards; • Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered; and, • Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.	Construction

Biodiversity	Pre-construction checks will be undertaken for spawning frogs in drainage ditches adjacent to the underground electricity line if construction works are undertaken in February. If found, adults and spawn will be translocated under NPWS licence to suitable alternative locations if present. Pitfall traps and drift fences will be used to capture adult frogs. Amphibian-proof fencing close to any ponds/pools will be used to prevent frogs or smooth newts from accessing any parts of the project most hazardous to amphibians during the construction phase.	Construction
Biodiversity	To prevent accidental disturbance to resting/breeding/hibernating places of mammals (badgers, red squirrel, pine marten, otter and hedgehog), an ecological walkover survey will be undertaken prior to any construction activities within the project footprint. If any sensitive locations for mammals are newly recorded, ongoing monitoring and appropriate exclusion zones will be implemented to determine when and where works can proceed. If exclusion zones cannot be implemented, NPWS will be contacted and based on their advice, additional mitigation and compensation will be implemented, with relevant licences applied for, if required. It is important to note that this is not anticipated to be required based on the survey results.	Construction
Biodiversity	Trees and structures within the works corridor will be re-assessed for bat roosting potential, with any inspections or emergence surveys carried out as required under licence.	Construction
Biodiversity	Checks for nesting birds will be required for construction undertaken during the bird breeding season. If nests are newly recorded, ongoing monitoring and appropriate exclusion zones will be implemented to determine when and where works can proceed. If exclusion zones cannot be implemented, NPWS will be contacted and based on their advice, additional mitigation and compensation will be implemented, with relevant licences applied for, if required.	Construction
Biodiversity	Maintenance of the drainage system will ensure the system is operating effectively and will be undertaken following the CIRIA C697 SuDS and Maintenance Manual. A review of the ecological mitigation measures will be required during the operational phase and project specific mitigation will be provided as appropriate where further measures are required to ensure no significant environmental effects on aquatic receptors and nature conservation sites.	Operational
Biodiversity	To avoid any effects on bats from lighting at the substation, cowled lighting will be used, directing light inwards to minimise disturbance of any commuting or foraging bats. Appropriate luminaire specifications will also be used for lighting at the substation as outlined in BCT (2023). These include:- • All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used; • LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability; • A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component; • Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most	Operational

	disturbing to bats (Stone, 2012); • Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards; • Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered; • Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt; and, • Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow.	
Biodiversity	Mitigation measures will be the same as for those for the construction phase. Specifically, surface runoff control measures will be put in place during decommissioning works. The drainage system at the electrical control unit will remain operational during the decommissioning phase and will serve to treat any sediment laden surface water run-off due to the renewed disturbance of soils. Following decommissioning, re-vegetation of excavated areas will be implemented as soon as practicable and monitored to ensure vegetation becomes fully established.	Decommissioning
Land & Soil	Mitigation measures, in respect of excavations, at the electricity substation site and electrical control unit site include:- • Placement of infrastructure in areas of suitable ground conditions based on detailed site investigation data; • The soil and subsoil which will be removed during the construction phase will be localised to the proposed infrastructure location; • The project has been designed to avoid sensitive habitats; • A minimal volume of soil and subsoil will be excavated and removed to allow for infrastructure works to take place in comparison to the total volume of these materials present at the site; • At the identified spoil deposition areas, the vegetative topsoil layer will be removed to allow for spoil to be placed and upon reaching the recommended height, the vegetative topsoil layer will be reinstated. Alternatively, the deposition areas may be covered in topsoil and allowed to vegetate; • The spoil deposition areas will be developed in a phased approach, with the topsoil removed and temporarily stockpiled within the defined area while the spoil is being placed. The stockpiled topsoil will then be reinstated over the placed spoil, and the exercise will continue within the same spoil deposition area until the area is full; • The placement of spoil will be restricted to a maximum height of 3.5m, subject to confirmation by the Geotechnical Engineer;	Construction

	• Where practical, the surface of the placed spoil is shaped to allow efficient run-off of surface water. Where possible, shaping of the surface of the spoil will be carried out as placement of spoil within the area progresses. This will reduce the likelihood of debris run-off and ensure stability of the placed spoil; • Finished/shaped side slopes of the placed spoil will be not greater than 1(v):2(h) in the deposition areas and not greater than 1(v):1(h) alongside access tracks; • Inspections of the spoil deposition areas will be made by a Geotechnical Engineer on a weekly basis during the construction phase and monthly for a 6-month period thereafter. The appointed contractor will review work practices at the spoil deposition areas when periods of heavy rainfall are expected so as to prevent excessive dirty water runoff from being generated; • An interceptor drain will be installed upslope of the spoil deposition areas to divert any surface water away from these areas; • The surface of the deposited spoil will be profiled to a gradient to be agreed with the Geotechnical Engineer and vegetated or allowed to vegetate naturally; • All the above-mentioned general guidelines and requirements will be confirmed by the Geotechnical Engineer prior to construction; and, • Spoil deposition areas are at a minimal distance from excavation areas to avoid excessive transport of excavated materials. Mitigation measures along the underground electricity line include:- • Soils and subsoils excavated along the underground electricity line will be temporarily stored in covered stock piles along the edge of the trench or immediately removed from site to a licensed waste management facility, as appropriate; and, The tarmacadam road surface will be replaced with the same design standard as the surrounding carriageway.	
Land & Soil	The following mitigation measures are proposed to prevent the erosion of soil and subsoil:- • Excavated soil will be side cast and stored temporarily adjacent to excavation areas for use during reinstatement and landscaping; • Silt fences will be installed around all temporary stockpiles and excavated areas to limit movement of entrained sediment in surface water runoff; • In order to minimise runoff during the construction phase, works will not take place during periods of intense or prolonged rainfall (to prevent increased silt laden runoff). Drainage systems will be implemented to limit runoff effects during the construction phase; • Bog mats will be used, as necessary, to support construction plant and machinery on soft ground, thus reducing the likelihood for soil and subsoil erosion and avoiding the formation of rutted areas. This will substantially reduce the likelihood for surface water ponding to occur; • Following the completion of construction, the spoil deposition areas will be covered with the vegetative	Construction

	layer removed to accommodate the footprint of the deposition areas or will be covered with topsoil and allowed to vegetate; • The underground electricity line will be constructed in a stepwise manner along its length. This will minimise the time any particular section of the underground electricity line trench is open before being reinstated; • A detailed Spoil Management Plan will be prepared as part of the Construction & Environmental Management Plan prior to the commencement of development; and, • Works at the spoil deposition areas will be monitored, on a weekly basis during the construction phase and monthly for a 6-month period thereafter, by an appropriately qualified Geotechnical Engineer.	
Land & Soil	The following measures are proposed to specifically prevent contamination of soils and subsoils:- • The volume of fuels or oils stored on site will be minimised; • All fuel and oil will be stored in an appropriately bunded area of sufficient capacity within the temporary construction compound. Only an appropriate volume of fuel will be stored at any given time. The bunded area will be roofed to avoid the ingress of rainfall and will be fitted with a storm drainage system and an appropriate oil interceptor; • All bunded areas will have 110% capacity of the volume to be stored; • An oil interceptor will be installed within the surface water drainage system at the electricity substation site during the construction phase to intercept any accidental hydrocarbon spillages; • From the construction compound, fuel will be transported to the works area by a 4x4, in a double skinned fuel bowser. The fuel bowser, a double-axel custom-built refuelling trailer will be re-filled at the temporary compound and will be towed around the site by a 4x4 jeep to where plant and machinery is located. The bowser/4x4 jeep will also be fully stocked with fuel absorbent material, pads and spill kits in the event of any accidental spillages. The fuel bowser will be parked on a level area in the construction compound when not in use and only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations to avoid any accidental leakages; • All plant and machinery used during construction will be regularly inspected for leaks and fitness for purpose; • Spill kits will be available to deal with any accidental spillages within the temporary construction compound and during refuelling; • All waste tar material arising from road cuttings (from trenching in public roads) will be removed off-site and disposed of at a licensed waste facility. Due to the potential for contamination of soils and subsoils, it is not proposed to utilise this material for any reinstatement works; and, • An emergency plan for the construction phase to deal with accidental spillages is contained within the Planning-Stage Construction and Environmental Management Plan. This emergency plan will be further	Construction

	developed by the contractor prior to the commencement of construction.	
Land & Soil	During and post-construction, all excavated or raised areas (i.e. cut and fill) and reinstated/landscaped ground, including the spoil deposition areas, will be inspected for signs of erosion and instability. These inspections will be undertaken by a suitably qualified Geotechnical Engineer on a weekly basis during the construction phase and monthly, for a six-month period, post construction.	Construction & Operational
Land & Soil	Oil used in transformers (and other electrical apparatus) and storage of hydrocarbons could result in leakages during the operational phase and result in effects on soil and subsoils. Any hydrocarbon storage areas will be located in a concrete bund capable of holding 110% of the stored oil volume. The electrical transformer will also be bunded and capable of holding 110% of the stored oil volume. The bunded areas will prevent leakage of any hydrocarbons or chemicals to groundwater or surface water. The storm drainage system will be fitted with an appropriate oil interceptor to ensure that no contaminants are discharged from the project site.	Operational
Land & Soil	In the event that access track maintenance is required, aggregates will only be sourced from authorised quarries.	Operational
Land & Soil	Mitigation measures applied during decommissioning activities will be similar to those applied during construction, where relevant. Some of the effects will be avoided by leaving elements of the project in place such as the electricity substation and underground electricity line ducts.	Decommissioning
Land & Soil	The electrical control unit hardstanding areas will be rehabilitated by covering with local topsoil/subsoil in order to regenerate vegetation which will reduce runoff and sedimentation effects. Mitigation measures to avoid contamination by accidental fuel leakage and compaction of soil by on-site plant will be implemented as per the construction phase mitigation measures.	Decommissioning
Water	The management of surface water runoff and subsequent treatment prior to release off-site will be undertaken during construction work as follows:- • Prior to the commencement of earthworks, silt fencing will be placed down-gradient of the construction areas, as required, until the full range of construction phase measures are installed; • These will be embedded into the local soils to ensure all site water is captured and filtered; • Clean water drains will include check dams to control flow rates and avoid erosion or scouring of the drain; • Water from the clean drains will be discharged by a buffered outfall or level spreader at greenfield runoff rates; • Water will be discharged from the clean drains over natural grassland or to existing agricultural drains which will provide further filtration; • All surface water runoff from works areas, excavations, stockpiles at the electricity substation site and electrical control unit site will be intercepted by downslope drains which will also include check dams; • These dirty water drains will direct water to stilling ponds where water for treatment and attenuation; • From the stilling ponds, water will be discharged to lagoon-type settlement ponds for final treatment. The settlement ponds will follow a design outlined by Altmuller and Dettmer (2006);	Pre-Construction & Construction

	• The treated water will then be discharged via a buffered outfall or level spreader, at greenfield rates, over natural grassland which will provide additional filtration and treatment; • The precise design, sizing and sitting of the drainage infrastructure will be confirmed as part of the post-consent detailed design process, however the design will be reflective of predicted rainfall levels with an appropriate allowance for climate change • Daily monitoring of the excavation/earthworks, the water treatment and pumping system and the discharge areas will be completed by a suitably qualified person during the construction phase. All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter will enter the main drainage channel; • If high levels of silt or other contamination is noted in the pumped water or the treatment systems, all construction works will be stopped. No works will recommence until the issue is resolved and the cause of the elevated source is remedied; and, • Earthworks will take place during periods of low rainfall to reduce run-off and potential siltation of watercourses. The construction of the site drainage system will be carried out, at the respective locations, prior to other activities being commenced. The construction of the drainage system will only be carried out during periods of, where possible, no rainfall, therefore avoiding runoff. This will avoid the risk of entrainment of suspended sediment in surface water runoff, and transport via this pathway to surface watercourses. Construction of the drainage system during this period will also ensure that attenuation features associated with the drainage system will be in place and functional for all subsequent construction works.	
Water	The majority of the underground electricity line is in excess of 50m from any nearby watercourse with the exception of the 5 no. watercourse crossings. No in-stream works are required at the crossing locations as HDD is proposed, however due to the proximity of the watercourses to the construction works, there is a risk of surface water quality effects during trench excavation work. Mitigation measures which are outlined below will be implemented to ensure that silt laden or contaminated surface water runoff from the trenching work does not discharge directly to the water:- • All existing dry drains that intercept the works area will be temporarily blocked down-gradient of the works using temporary check dams/silt traps (e.g. straw bales); • Clean water diversion drains will be installed upgradient of the works areas, as required; • Check dams/silt fence arrangements (silt traps or straw bales) will be placed in all existing drains that have surface water flows and also along existing roadside drains; and, • A double silt fence perimeter will be placed down-slope of works areas that are located inside the watercourse 50m buffer zones such as at watercourse crossing locations.	Pre-Construction & Construction
Water	The works programme for the construction stage of the project will also take account of weather forecasts, and predicted rainfall in particular. Large excavations and movements of soil/subsoil or vegetation stripping will be	Construction

	suspended or scaled back if prolonged or intense rain is forecast. The extent to which works will be scaled back or suspended will relate directly to the amount of rainfall forecast. The following forecasting systems are available and will be used on a daily basis at the site to direct proposed construction activities:- • General Forecasts: Available on a national, regional and county level from the Met Eireann website (www.met.ie/forecasts). These provide general information on weather patterns including rainfall, wind speed and direction but do not provide any quantitative rainfall estimates; • Meteo Alarm: Alerts to the possible occurrence of severe weather for the next 2-days. Less useful than general forecasts as only available on a provincial scale; • 3-hour Rainfall Maps: Forecast quantitative rainfall amounts for the next 3-hours but does not account for possible heavy localised events; • Rainfall Radar Images: Images covering the entire country are freely available from the Met Eireann website (www.met.ie/latest/rainfall_radar.asp). The images are a composite of radar data from Shannon and Dublin airports and give a picture of current rainfall extent and intensity. Images show a quantitative measure of recent rainfall. A 3-hour record is given and is updated every 15-minutes. Radar images are not predictive; and, • Consultancy Service: Met Eireann provide a 24-hour telephone consultancy service. The forecaster will provide interpretation of weather data and give the best available forecast for the area of interest. The use of safe threshold rainfall values will allow work to be safely controlled (from a water quality perspective) in the event of an impending high rainfall intensity event. Works will be suspended if forecasting suggests either of the following is likely to occur:- • >10 mm/hr (i.e. high intensity local rainfall events); • >25 mm in a 24-hour period (heavy frontal rainfall lasting most of the day); or, • >half monthly average rainfall in any 7 days. Prior to works being suspended, the following control measures should be completed:- • Secure all open excavations; • Provide temporary or emergency drainage to prevent back-up of surface runoff; and, Avoid working during heavy rainfall and for up to 24-hours after heavy events to ensure drainage systems are not overloaded.	
Water	The management of excavation dewatering (pumping), particularly in relation to any accumulation of water in foundations or electricity line trenches, and subsequent treatment prior to discharge into the drainage network will be undertaken as follows:- • Appropriate interceptor drainage, to prevent upslope surface runoff from entering excavations, will be installed as relevant; • The interceptor drainage will not be discharged directly to surface waters to ensure that Greenfield runoff	Construction

	rates are mimicked; • If required, pumping of excavation inflows will prevent build up of water in the excavation; • All pumped water will be directed to the surface water drainage system for treatment prior to discharge. In the case of the electricity line, any pumped waters will be discharged over grassland to allow for filtration; • There will be no direct discharge to local drains, and therefore no risk of hydraulic loading or contamination will occur; • Daily monitoring of site excavations by the EM will occur during the construction phase. If high levels of seepage inflow occur, excavation work at this location will cease immediately and a geotechnical assessment undertaken; and, • A mobile 'Siltbuster' or similar equivalent specialist treatment system will be available on-site for emergencies. Siltbusters are mobile silt traps that can remove fine particles from water using a proven technology and hydraulic design in a rugged unit. The mobile units are specifically designed for use on construction-sites and will be used as final line of defence, if required.	
Water	Mitigation measures proposed to avoid release of hydrocarbons at the site are as follows:- • The volume of fuels or oils stored on site will be minimised. All fuel and oil will be stored in an appropriately bunded area within the temporary construction compounds. Only an appropriate volume of fuel will be stored at any given time. The bunded area will be roofed to avoid the ingress of rainfall and will be fitted with a storm drainage system and an appropriate oil interceptor; • All bunded areas will have 110% capacity of the volume to be stored; • On site re-fuelling of machinery will be carried out using a mobile double skinned fuel bowser. The fuel bowser, a double-axel custom-built refuelling trailer, will be re-filled at the temporary compound and will be towed around the site by a 4x4 jeep to where plant and machinery is located. The 4x4 jeep will also be fully stocked with fuel absorbent material and pads in the event of any accidental spillages. The fuel bowser will be parked on a level area in the construction compound when not in use and only designated trained and competent operatives will be authorised to refuel plant on site. Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations to avoid any accidental leakages; • All plant and machinery used during construction will be regularly inspected for leaks and fitness for purpose; • Spill kits will be readily available to deal with and accidental spillage; • All waste tar material arising from road cuttings (from trenching or other works in public roads) will be removed off-site and taken to a licensed waste facility. Due to the possibility of contamination of soils and subsoils, it is not proposed to utilise this material for any reinstatement works or for storage within the spoil deposition areas; and • An outline emergency plan for the construction phase to deal with accidental spillages is contained within the Planning-Stage CEMP (**Annex 3.5**). This emergency plan will be further developed prior to the commencement of development, and will be agreed with the Planning Authority as part of the detailed	Construction

	CEMP.	
Water	Measures to avoid contamination of ground and surface waters by wastewaters will comprise:- • Self contained port-a-loos (chemical toilets) with an integrated waste holding tank will be installed at the temporary construction compound, maintained by the providing contractor, and removed from site on completion of the construction works; • Water supply for the site office and other sanitation will be brought to site and removed after use to be discharged at a suitable off-site treatment location; and, • No water will be sourced on the site during construction, nor will any wastewater be discharged to the site.	Construction
Water	The following mitigation measures are proposed to ensure that the release of cement-based products is avoided:- • No batching of wet-cement products will occur on site. Ready-mixed concrete will be brought to site as required and, where possible, emplacement of pre-cast products, will take utilised; • Where concrete is delivered on site, only the chute will be cleaned, using the smallest volume of water practicable. Chute cleaning will be undertaken at lined cement washout ponds within the temporary construction compound with waters being tankered off site and disposed of at an approved licensed facility. There will be no discharge of cement contaminated waters to the construction drainage system or to any drain; • Weather forecasting will be used to ensure that prolonged or intense rainfall is not predicted during concrete pouring activities; and, • The pour site will be kept free of standing water and plastic covers will be ready in case of sudden rainfall event.	Construction
Water	Temporary silt fencing/silt trap arrangements (e.g. straw bales) will be placed within existing roadside/field drainage features along the electricity line route to remove any suspended sediments from the works area. The trapped sediment will be removed and disposed of at an appropriate licenced facility. Any bare-ground will be re-seeded/reinstated immediately and silt fencing temporally left in place if necessary. The following mitigation measures are proposed in respect of the installation of the culvert over the unnamed stream to the north of the electricity substation:- • The stream crossing will be a clear span bridge (bottomless culvert) and the stream bed will remain undisturbed. No in-stream excavation works are proposed or anticipated as being required and therefore there will be no effect on the stream; • At the time of construction, all guidance/best practice requirements of the Office of Public Works (OPW) or Inland Fisheries Ireland will be incorporated into the design/construction of the proposed watercourse/culvert crossings; • As a further precaution, in-stream construction work (if required) will only be carried out during the period permitted by Inland Fisheries Ireland for in-stream works according to *Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters* (2016) (i.e., July to September inclusive). This time	Construction

	period coincides with the period of lowest expected rainfall, and therefore minimum runoff rates. This will minimise the risk of entrainment of suspended sediment in surface water runoff, and transport via this pathway to surface watercourses (any deviation from this will be done in discussion with the IFI); and, • The installation of the culvert will require a Section 50 license application to the OPW in accordance with the Arterial Drainage Act 1945. The stream crossing will be designed in accordance with OPW guidelines/requirements on applying for a Section 50 consent.	
Water	In terms of directional drilling:- • Although no in-stream works are proposed, the drilling works will only be done over a dry period between July and September (as required by IFI for in-stream works) to avoid the salmon spawning season and to have more favourable (dryer) ground conditions; • The crossing works areas will be clearly marked out with fencing or flagging tape to avoid unnecessary disturbance; • There will be no storage of material/equipment or overnight parking of machinery inside a 10m buffer zone which will be imposed around the watercourses; • Before any ground works are undertaken, double silt fencing will be placed upslope of the watercourse channel along the 10m buffer zone boundary; • Additional silt fencing or straw bales (pinned down firmly with stakes) will be placed across any natural surface depressions/channels that slope towards the watercourse; • Silt fencing will be embedded into the local soils to ensure all site water is captured and filtered; • The area around the bentonite batching, pumping and recycling plant will be bunded using terram (as it will clog) and sandbags in order to contain any spillages; • Drilling fluid returns will be contained within a sealed tank/sump to prevent migration from the works area; • Spills of drilling fluid will be clean up immediately and stored in an adequately sized skip before been taken off-site; • If rainfall events occur during the works, there will be a requirement to collect and treat small volumes of surface water from areas of disturbed ground (i.e. soil and subsoil exposures created during site preparation works); • This will be completed using a shallow swale and sump down slope of the disturbed ground; and water will be pumped to a proposed percolation area at least 50m from the watercourses; • The discharge of water onto vegetated ground at the percolation area will be via a silt bag which will filter any remaining sediment from the pumped water. The entire percolation area will be enclosed by a perimeter of double silt fencing; • Any sediment laden water from the works area will not be discharged directly to a watercourse or drain; • Works shall not take place during periods of heavy rainfall and will be scaled back or suspended if heavy rain is forecasted;	Construction

	• Daily monitoring of the works area, the water treatment and pumping system and the percolation area will be completed by a suitably qualified person during the construction phase. All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter is discharged to the watercourse; • If high levels of silt or other contamination is noted in the pumped water or the treatment systems, all construction works will be stopped. No works will recommence until the issue is resolved and the cause of the elevated source is remedied; • On completion of the works, the ground surface disturbed during the site preparation works and at the entry and exit pits will be carefully reinstated; • The silt fencing upslope of the river will be left in place and maintained until the works area has been fully reinstated; • There will be no batching or storage of cement allowed at the watercourse crossing; • There will be no refuelling allowed within 100m of the watercourse crossing; and, • All plant will be checked for purpose of use prior to mobilisation at the watercourse crossing. A Fracture Blow-out (Frac-out) Prevention and Contingency Plan will be prepared by the drilling contractor prior to construction and will include the following measures:- • The drilling fluid/bentonite will be non-toxic and naturally biodegradable (i.e., Clear Bore Drilling Fluid or similar will be used); • The area around the drilling fluid batching, pumping and recycling plants will be bunded using terram and/or sandbags to contain any potential spillage; • A double row of silt fencing will be placed between the works area and the adjacent river; • Spills of drilling fluid will be cleaned up immediately and transported off-site for disposal at a licensed facility; • Adequately sized skips will be used where temporary storage of arisings are required; • The drilling process/pressure will be constantly monitored to detect any possible leaks or breakouts into the surrounding geology or local watercourse; • This will be gauged by observation and by monitoring the pumping rates and pressures. If any signs of breakout occur then drilling will be immediately stopped; • Any frac-out material will be contained and removed off-site; • The drilling location will be reviewed, before re-commencing with a higher viscosity drilling fluid mix; and, • If the risk of further frac-out is high, a new drilling alignment will be sought at the crossing location.	
Water	No fuel storage will be permitted along the electricity line located within the Monefelim River catchment	Construction
Water	Stormwater control measures are as follows:- • During the operational phase, stormwater from the substation and electrical control unit compound areas will be discharged to local drains or to ground via soakaways following attenuation;	Operational

	• Stormwater discharge from the project site will be limited to greenfield runoff rates, therefore there will be no increase in storm water runoff rates entering the local environment; • Runoff from the compound areas will also be passed through an oil interceptor to prevent any discharge of hydrocarbons.	
Water	Proposed mitigation measures for storage of fuel and chemicals are outlined as follows:- • All storage containers will be labelled appropriately, including hazardous markings; • All holding tanks will be constructed of material appropriate for fuel/chemical storage and will be bunded to at least 110% of the maximum tank volume; • All bulk tanks will be located within an impervious bund; • Bunds will be to standard specified in CIRIA Report 163 'Construction of bunds for oil storage tanks' and CIRIA Report C535 'Above-ground proprietary prefabricated oil storage tank systems; • Barrels and bunded containers will be stored upright and internally where appropriate and always on drip trays or sump pallets; • Appropriate spill kits will be available at all storage locations; • All fuel/chemical storage facilities will be subject to weekly inspection; and, • Leaking or empty drums will be removed from the site immediately and disposed of via a registered waste disposal contractor.	Operational
Water	As in the construction phase, surface runoff control measures will be put in place during decommissioning works. The drainage system at the electrical control unit will remain operational during the decommissioning phase and will serve to treat any sediment laden surface water run-off due to the renewed disturbance of soils. Following decommissioning, re-vegetation of excavated areas will be implemented as soon as practicable and monitored to ensure vegetation becomes fully established.	Decommissioning
Air Quality & Climate	In order to minimise dust emissions during construction, a series of mitigation measures have been prepared in the form of a Planning-Stage Dust Minimisation Plan.	Construction
Air Quality & Climate	The on-site access track and public roads in the vicinity of the project site shall be regularly cleaned to remove mud, aggregates and debris and maintained as appropriate. All road sweepers shall be water assisted.	Construction
Air Quality & Climate	If the access track has the potential to give rise to fugitive dust shall be regularly watered, as appropriate, during dry and/or windy conditions.	Construction
Air Quality & Climate	In the event of dust nuisance occurring outside the site boundary, movement of materials will be immediately terminated, and satisfactory procedures implemented to rectify the problem before the resumption of operations.	Construction
Air Quality & Climate	If issues persist and the above measures are not satisfactorily controlling dust emissions, a wheel washing system with rumble grids to dislodge accumulated dust and mud prior to leaving the site should be installed.	Construction
Air Quality & Climate	During movement of materials off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance	Construction

	onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.	
Air Quality & Climate	Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.	Construction
Air Quality & Climate	The Dust Minimisation Plan shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures	Construction
Air Quality & Climate	At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust will be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.	Construction
Landscape	Aside from standard construction phase measures to minimise land and vegetation disturbance (such as delineating the works area) and dust emissions (through damping down of access tracks if necessary), no specific landscape and visual mitigation measures are to be implemented. The appropriate management and reinstatement of excavations promptly will ensure that any adverse effects caused, for example, at the site entrance or along the route of the underground electricity line, are minimised insofar as possible.	Construction
Landscape	Similarly, the progressive reinstatement and landscaping of the project site will remediate any short-term adverse effects on the local landscape. As part of the reinstatement and landscaping process, the planting of hedgerows will also be completed at the electricity substation and electrical control unit locations.	Construction
Landscape	Whilst some sections of hedgerow will be removed to facilitate the electricity substation compound, access tracks and site entrnaces, existing hedgerows will be maintained and protected insofar as possible.	Operational
Landscape	In addition to retaining the existing hedgerows around the electricity substation site, it is also proposed to bolster existing perimeter and most internal hedgerows with under-planting and inter-planting of whip transplants in order to ensure dense and consistent screening of the site in perpetuity. The bolstering will be undertaken where required to thicken and fill gaps in the existing hedgerow network	Operational
Landscape	Advanced nursery stock in the form of 8-10cm girth trees will be used to fill any noticeable gaps and plant species will be selected to complement the existing broadleaf hedgerow species mix around the site and will be of local provenance. Where not already exceeded by existing vegetation, it is intended to manage hedgerows up to 3-4m in height. This height will be achieved by a combination of allowing lower sections of existing hedgerows to mature, filling obvious gaps with advanced nursery stock and providing an additional line of whip planting to selected hedgerows that require densification.	Operational
Landscape	It is also proposed to plant new hedgerows with whips and a high proportion of advance nursery stock trees (c. 3m planted height), in select locations to increase screening of adjacent residences and define the site boundaries where these are not exiting field boundaries. The planting will be allowed to mature up to a maintained height of 3-4m to aid in the screening and softening of the project from nearby dwellings and the surrounding road network.	Operational

Landscape	Following the decommissioning of the electrical control unit and the electricity line, all excavated or disturbed areas will be soiled over and re-seeded or allowed to vegetate naturally.	Decommissioning
Cultural Heritage	Archaeological monitoring of all excavations associated with construction of the electricity substation shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring.	
Cultural Heritage	Archaeological monitoring of all excavations associated with construction of the electrical control unit shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring.	
Cultural Heritage	Archaeological monitoring of all excavations associated with construction of the underground electricity line shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring.	
Cultural Heritage	Archaeological monitoring of all excavations at townland, parish, barony and county boundaries shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring.	
Cultural Heritage	Written and photographic records will be created of any townland, parish, barony and county boundaries that may be affected. The written and photographic records will be created in advance of excavations commencing on site.	
Noise & Vibration	The contractors involved in the construction phase will be obliged, under contract, to undertake specific noise abatement measures and comply with the recommendations of *BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise.*	Construction & Decommissioning
Noise & Vibration	No plant or machinery will be permitted to cause a public nuisance due to noise.	Construction & Decommissioning
Noise & Vibration	The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations.	Construction & Decommissioning
Noise & Vibration	All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.	Construction & Decommissioning
Noise & Vibration	Compressors will be attenuated models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.	Construction & Decommissioning
Noise & Vibration	Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in	Construction &

	use.	Decommissioning
Noise & Vibration	Any plant, such as generators or pumps, which may be required to operate outside of general construction hours will be surrounded by an acoustic enclosure or portable screen.	Construction & Decommissioning
Noise & Vibration	The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 07:00 and 19:00 Monday to Friday and between 07:00hrs and 13:00hrs on Saturdays (unless in the event of an emergency), with no operations on Sundays or public holidays.	Construction & Decommissioning
Noise & Vibration	In the unlikely event that rock breaking is necessary, the following measures will be implemented to mitigate noise emissions:- • Fit suitably designed muffler or sound reduction equipment to the rock breaking tool to reduce noise without impairing machine efficiency; • Ensure all air lines are sealed; • Use a dampened breaking bit to eliminate a 'ringing' sound; and, • Erect an acoustic screen around breaking activities. Where possible, line of sight between top of machine and reception point should be obscured.	Construction & Decommissioning
Material Assets (Transport & Access)	A Traffic Management Plan shall be agreed as part of the Construction Environmental Management Plan (CEMP) with the Planning Authority (Authorities) prior to the commencement of development. The Traffic Management Plan shall include *inter alia* confirmed details of construction material haul routes; confirmed details of vehicle specifications; a materials delivery programme; traffic management measures including details of signage, road closures and diversionary routes; and road reinstatement details.	Construction
Material Assets (Transport & Access)	Appropriate traffic management; including maintenance of local access and pedestrian access (where safe to do so); shall be implemented to facilitate continued public use of roads where temporary traffic restrictions have to be put in place. Precise details of these measures will be detailed in the Traffic Management Plan.	Construction
Material Assets (Transport & Access)	Construction phase traffic movements will be limited to 07:00-19:00 Monday to Friday and 07:00–13:00 on Saturdays with no movements on Sundays or public holidays. It may be occasionally necessary to undertake works outside of these hours, for example in the event of an emergency, which would necessitate traffic movements. Where construction activities are necessary outside of the normal working hours, local residents and the Planning Authority (Authorities) will receive prior notification.	Construction
Material Assets (Transport & Access)	Due to the transient nature of the underground electricity line works, rolling road closures will be implemented where the electricity line is to be installed within the carriageway of public roads. Traffic restrictions shall be kept to minimum duration and extent.	Construction
Material Assets (Transport & Access)	All reasonable steps shall be taken to ensure that national and regional routes are used to transport all materials to the site, insofar as is possible.	Construction
Material Assets	Prior to, and post, construction; pavement condition surveys will be undertaken along all non-national access	Construction

(Transport & Access)	routes proposed to be utilised in the delivery of construction materials. Given the high-quality and well-maintained nature of motorways and national routes, it is not assessed as necessary to carry out surveys of these carriageways or structures. Following the completion of the pre-construction surveys, any works which are assessed as necessary to facilitate the delivery of components and materials to the project site shall be undertaken, while any deterioration of carriageways or structures identified in the post-construction survey shall be put right at the expense of the Developer and to the satisfaction of the Planning Authority (Authorities).	
Material Assets (Transport & Access)	Appropriate and adequate signage shall be provided at all entrances providing access, safety and warning information.	Construction
Material Assets (Transport & Access)	At the site entrances leading to the electricity substation and electrical control unit, roadside hedgerows shall be trimmed prior to the commencement of construction to ensure that visibility splays are provided in advance of the delivery of construction materials.	Construction
Material Assets (Transport & Access)	Sufficient car parking spaces will be available at the temporary construction compound during the construction phase. Additionally, during construction of the underground electricity line, it is likely that agricultural premises will be used for the temporary storage of materials (e.g. ducting, cabling, etc.) and for the parking of construction plant, machinery, and work vehicles (cars, vans, etc.). No parking of cars by persons associated with the project will be permitted on any part of the public road that is not closed to traffic. All staff will be instructed to ensure that private entrances remain unobscured (particularly along the electricity line route).	Construction
Material Assets (Transport & Access)	A dry wheel washing facility (or facilities) will be provided, as necessary, to prevent any debris being transferred from electricity substation site and the electrical control unit compound to the adjacent public roads. All drivers will be required to ensure that their vehicle is free from dirt and stones prior to departure from the project site. Where conditions exist for dust to become friable, techniques such as damping down of the affected areas will be employed and vehicles/loads will be covered to reduce dust emissions.	Construction
Material Assets (Transport & Access)	All works within the public road corridor (i.e. underground electricity line) shall be undertaken in consultation with, and agreed in advance with, the Planning Authority (Authorities) and only following receipt of all necessary licences, permits and consents.	Construction
Material Assets (Transport & Access)	Joint bases will be installed within private lands and not within the public road corridor.	Construction
Material Assets (Transport & Access)	Road sweeping, particularly along the underground electricity line route, will be carried out as appropriate to ensure construction traffic does not adversely affect road conditions.	Construction
Material Assets (Transport & Access)	Speed limit compliance will be emphasised to all staff and contractors prior to the commencement of construction during site induction, and will be strictly enforced throughout the construction phase.	Construction
Material Assets (Transport & Access)	Following the installation of the electricity line ducting, the trench will be backfilled with appropriate material and temporarily reinstated. Following the installation of the underground electricity line, all public roads within which it is proposed to install the underground electricity line will be subject to a full-width carriageway reinstatement (re-	Construction

	surfacing) of the relevant road section. Road reinstatement specifications and methodologies will be agreed with the Planning Authority (Authorities) prior to the commencement of development and as part of the road opening licencing process.	
Material Assets (Transport & Access)	The project will not require the delivery of any abnormal-sized or abnormal-weight loads. The electrical transformer to be installed at the electricity substation will be delivered to site via multiple loads; the heaviest of which will have a weight of c. 68-tonnes; and maximum axle loadings shall be strictly enforced in accordance with the Road Traffic (Construction and Use of Vehicles) Regulations 2003 (S.I. No. 5 of 2003). The Developer will engage with all relevant stakeholders once the precise delivery route of the electrical transformer is known. Furthermore, and in accordance with Circular RW18 of 2024 as published by the Department of Transport, the project will not require the delivery of any Exceptional Abnormal Loads.	Construction
Material Assets (Transport & Access)	A designated contact point and coordinator will be put in place to manage all access arrangements and to interface with the public and the Planning Authority (Authorities).	Construction
Material Assets (Transport & Access)	The electricity substation site and active underground electricity line works area shall be closed, and strictly secured, to the public during the construction phase.	Construction
Material Assets (Resources & Utility Infrastructure)	Accidental collision with overhead wires or sub-surface cables/pipes will be mitigated through the implementation of good construction practice and procedures.	Construction
Material Assets (Resources & Utility Infrastructure)	The sourcing of aggregates locally and from facilities which have been subject to EIA, will mitigate against the likelihood of significant effects during the construction phase	Construction
Material Assets (Resources & Utility Infrastructure)	During the process of connecting the project to the national grid, EirGrid will balance the loading on the electricity network to ensure that no significant disruption occurs, and likely significant effects do not arise.	Construction
Material Assets (Resources & Utility Infrastructure)	The installation of the underground electricity line will be undertaken in strict accordance with the *Code of Practice for Working in the Vicinity of the Transmission Network* (Gas Networks Ireland, 2021) and particularly with respect to the use of hand-held equipment within 1.5m (linear distance) of the pipeline. Prior to the commencement of trenching activities within 50m of the gas line, the appointed contractor will prepare a detailed Method Statement outlining the precise methodology to be implemented. The Method Statement will also detail the use and management of heavy machinery (tracked excavators, etc.) during works within 50m of the pipeline. This statement will be reviewed by Gas Networks Ireland to confirm the appropriateness of the proposed methodology and ensure that all necessary mitigation and incident prevention measures are adhered to. The Method Statement may also be reviewed, as necessary, by the Planning Authority.	Construction
Material Assets (Resources & Utility	A set of measures will be implemented to ensure the protection of the gas pipeline, including:-	Operational

Infrastructure)	• Prior to the commencement of operations, baseline electrical interference measurements will be undertaken at the gas pipeline. Datalogging will be undertaken at the Gas Networks Ireland test posts located along the pipeline and in proximity to the electricity substation over a minimum period of 5-days. Soil resistivity values will also be recorded; and • Once baseline levels are recorded, the electrical/inductive interference levels for normal and fault operations will be re-calculated. In the event that additional mitigation is required, or requested by Gas Networks Ireland, this is likely to comprise the repair of any known pipeline coating defects and/or monitoring of interference levels. Such works will be undertaken by Gas Networks Ireland in consultation with the Developer, where necessary; • During commissioning of the electricity line and substation, interference levels will again be measured to reaffirm the previous calculations; • Interference will continue to be recorded at the existing test posts. It should be noted that the precise details and implementation of any mitigation measures will be dictated by Gas Networks Ireland, who may require additional or alternative measures to those described above.