

Volume 1: Non-Technical Summary

**Kilcumber Bridge 110kV substation, County Offaly.
Environmental Impact Assessment Report (EIAR)**

**Project No. 21280
March 2021**



Malachy Walsh and Partners
Engineering and Environmental Consultants

Table of contents

1	INTRODUCTION	1
1.1	The Applicant.....	1
1.2	EIA Study Team.....	1
1.3	scope and methodology	1
2	DESCRIPTION OF THE PROPOSED DEVELOPMENT	2
2.1	Site Location	4
2.2	Receiving Environment	4
2.3	Need for the development	5
2.4	Alternatives Considered	5
2.5	consultation.....	6
2.5.1	Consultation during the Cushaling Wind Farm EIAR	6
2.5.2	Consultation for the stand alone Kilcumber Bridge 110kV substation	6
2.6	construction timeline and personnel	6
3	ENVIRONMENTAL IMPACTS AND MITIGATION	8
3.1	Population and Human Health	8
3.2	Biodiversity	9
3.3	Land and Soils.....	11
3.4	Water	11
3.5	Air and climate	12
3.6	Noise.....	13
3.7	Landscape and visual impact	14
3.8	Cultural Heritage.....	15
3.9	Traffic and Transportation.....	15
3.10	Material Assets	16
3.11	Interaction of the Foregoing.....	17
4	MITIGATION AND MANAGEMENT OF ENVIRONMENTAL IMPACTS	19

1 INTRODUCTION

Cloncant Renewable Energy Ltd. (the Applicant) is seeking planning permission to develop a 110 kV (kilovolt) electrical substation and 400m overhead line grid connection on a 5-hectare site in the townlands of Ballykilleen, Cloncreeen and Ballinowlart North near Edenderry, County Offaly. Once the development is completed the ownership of the facility will transfer to Eirgrid who will operate and maintain the development as part of the national electricity grid.

The planning application is being submitted to An Bord Pleanála (ABP) as Strategic Infrastructure Development (SID).

Malachy Walsh and Partners (MWP) were commissioned by the Applicant to prepare an Environmental Impact Assessment Report (EIAR) for the proposed development in support of the planning application to An Bord Pleanála (ABP).

The contents of the EIAR are as follows:

- Volume 1: Non-Technical Summary
- Volume 2: Main EIAR
- Volume 3: Appendices

This document is the Non-Technical Summary, Volume 1 of the EIAR. The purpose of the Non-Technical Summary is to provide a concise overview, in non-technical terms, of the issues, impacts and mitigation measures highlighted by the Environmental Impact Assessment and presented in detail in the Main EIAR, Volume 2. Appendices are provided in Volume 3.

1.1 THE APPLICANT

The Applicant is Cloncant Renewable Energy Ltd., a subsidiary of Statkraft Ireland. Statkraft Ireland is wholly owned by Statkraft, Europe's largest generator of renewable energy.

The Applicant was granted planning permission in September 2020 for a 9-turbine wind farm, wind farm substation and battery energy storage facility on a site to the northeast (ABP File References: ABP-306924-20, ABP-306748-20).

1.2 EIA STUDY TEAM

This EIAR has been compiled by Malachy Walsh and Partners (MWP), Engineering and Environmental Consultants, The Elm Suite, Loughmore Centre, Raheen Business Park, Limerick with input from our Tralee office located at Reen Point, Blennerville, Tralee, Co. Kerry. The document has been informed by environmental studies and technical reports by experts in their field and also contains input provided by Macroworks and Laurence Dunne Archaeology (refer to Volume 2 for further details).

1.3 SCOPE AND METHODOLOGY

The scope of this EIAR is to assess the development of a 110kV electrical substation at the subject site and its connection to the National Grid by means of an overhead line to the existing Cushaling to Mount Lucas 110kV line.

All phases of the proposed development, namely construction and operation, have been assessed within the EIAR.

The preparation of the EIAR follows standard EIA methodology according to the various categories listed in Schedule 2 of the European Communities (Environmental Impact Assessment) (Amendment) Regulations 1999 (S.I. No. 93 of 1999), Schedule 2B of the Planning and Development Regulations 2001-2018, and the requirements of the 2014 EIA Directive. The methodology recommended in the EPA Guidance Document '*Draft Guidelines on the Information to be contained in Environmental Impact Reports*' (EPA, 2017), which is based on the 2014 EIA Directive, has also been followed.

2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

See **Figure 1** below (full size in **Vol 3 Appendix 6 Drawings**) for a layout of the proposed development. It will consist of the following:

- A 110kV electrical substation (referred to as 'Kilcumber Bridge 110kV substation');
- A grid connection consisting of an 110kV overhead line (OHL), approximately 400 metres long, between the proposed substation and the existing Cushaling to Mount Lucas 110kV line;
- A site entrance on the R401 and an internal access road;
- A temporary construction compound within the site;
- A surface water management system; and
- All associated site development works.

The proposed substation will be operated by EirGrid and will transmit electricity to the National Grid via a 12m high overhead line connected to the existing 110kV line.

The substation will consist of a 12,875m² compound containing all the components of a substation including a single story substation control building, electrical gear and hardstand areas. An additional 7,524m² area is provided for future expansion of the substation electrical capacity. The construction of the substation will consist of the stripping of the topsoil across the compound area followed by the placement of approximately 1-1.6m (depending on existing topography) of hardcore rock up to the compound level of the substation. An estimated 28,000m³ of rock will be delivered over the first two month period of the substation construction (See **Traffic section 3.9** below). The maximum height of the associated infrastructure in the substation compound will be 19m (light pole), most of the infrastructure will be 8-14m in height. The control building will be painted to an agreed colour to minimise visual impact. Parking and a hardstand area will be located outside of the control building on the eastern side. The compound will be surrounded by a 2.6m galvanised steel high palisade fence.

The 400m section of overhead line will be supported by 3 pairs of 12m-high wooden poles and 2 pairs of 12m-high steel lattice pylons at either end.

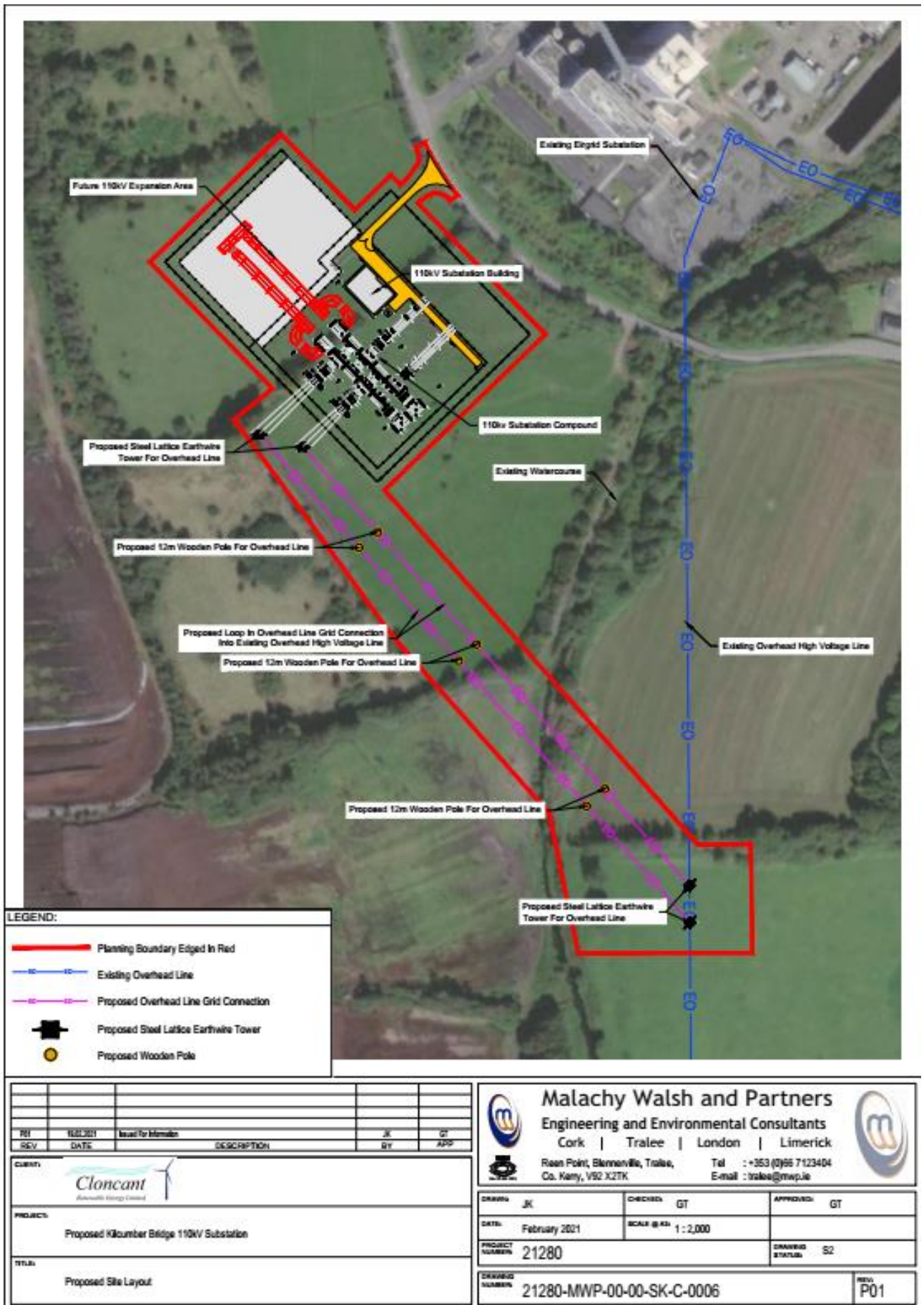


Figure 1 Proposed Site Layout (full size in Vol 3 Appendix 6 Drawings)

2.1 SITE LOCATION

The proposed development site is located predominantly in the townlands of Ballykilleen, Cloncreen and Ballinowlart North, Co. Offaly. It is approximately 6km south of Edenderry (See **Figure 2** below). The grid route extends into the townlands of Cloncreen and Ballinowlart North.

The site can be accessed from the R401 just west of Kilcumber Bridge. The site is approximately 1km east of the consented Cloncreen Wind Farm, 80m west of Edenderry Power Plant and the existing Cushaling 110kV EirGrid substation and 1.2km southwest of the consented Cushaling Wind Farm.

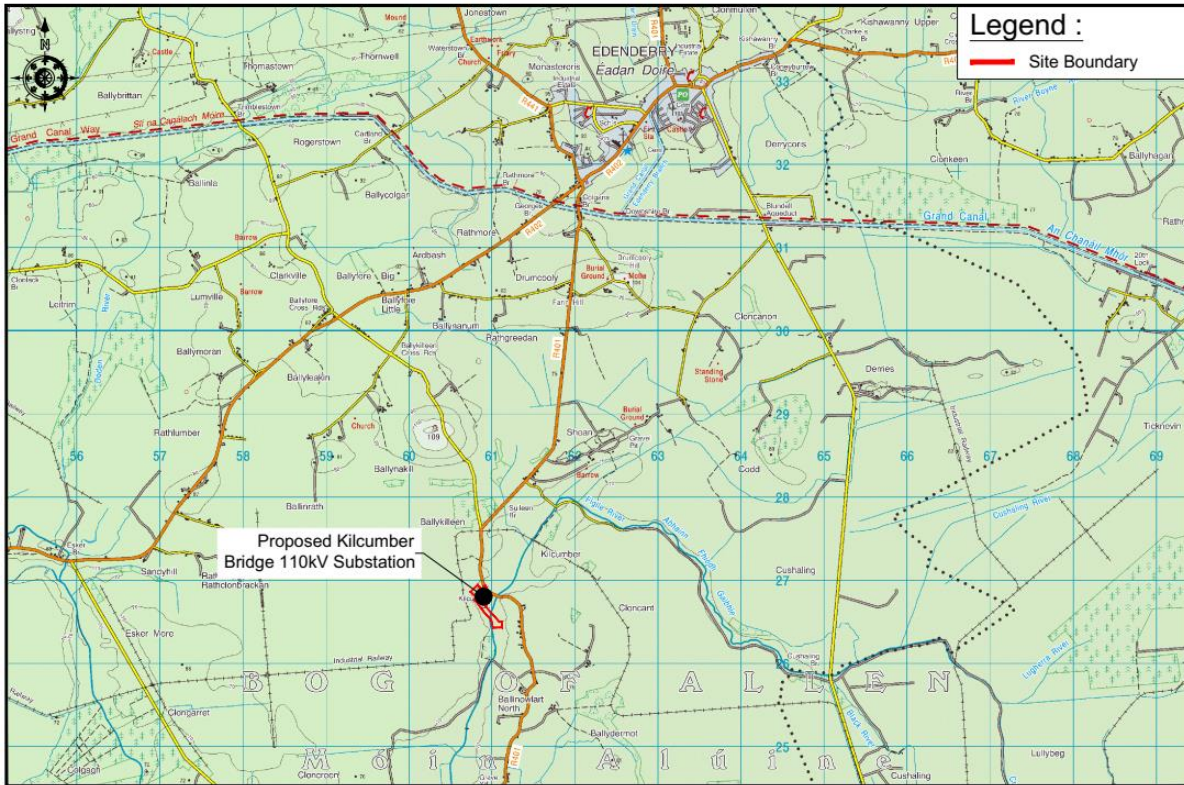


Figure 2: Location of the Proposed Development

2.2 RECEIVING ENVIRONMENT

The total site area is approximately 5.3 hectares. Existing land-use at the site is agriculture (**Plate 1 below**). The site is relatively flat with topography at approximately 67 metres Above Ordnance Datum (mAOD).

The Figle River is located 70m to the east of the proposed substation. The proposed OHL will traverse the river.

The closest residential property is approximately 200m to the east of the substation on the R401. There is a further cluster of residential dwellings approximately 220m to the east of the southernmost pylon.

Ecological surveys of the site indicate that habitats within the footprint of the site comprise improved agricultural grassland.



Plate 1: View of the site from the southeast/R401

2.3 NEED FOR THE DEVELOPMENT

The existing Cushaling 110kV substation located adjacent to the Edenderry Power Station is at capacity. Permitted and future renewable energy projects in the area require a new 110kV substation to connect to the National Grid.

2.4 ALTERNATIVES CONSIDERED

The proposed substation was planned in conjunction with the permitted Cushaling Wind Farm. EirGrid were consulted in relation to the grid connection route and location. A number of alternative locations were considered:

Option A was to locate the wind farm substation on the wind farm site with an underground connection running west and southward along the R401 to the existing Cushaling substation.

Option B was to locate the wind farm substation on adjacent Bord na Móna property with either an underground or overground connection across intervening lands to the existing Cushaling substation.

Option C was to locate the wind farm substation on a site opposite Edenderry Power Plant with an underground cable connection across the R401 directly into the existing Cushaling substation.

Option C was adjudged to be the most suitable location for both substations and connection to the national grid network on the basis that it is the closest, most direct and most economically feasible.

The original Option C grid route option for the 110kV grid connection was an underground line going into the existing Cushaling 110kV substation. This was changed to the proposed grid connection route due to two reasons;

- Ease of access for the connection into the existing and adjacent Mount Lucas – Cushaling 110kV overhead line.
- An agreement with the proposed grid connection route landowner.

Both an overhead line and an underground cable were considered as options for the new grid connection route. This was reduced to the overhead line only, mainly due to an Eirgrid specification for a permanent road on the underground cable route and the intrusive nature of the cable trenching work. It was considered that an overhead line would have potentially less impact on the surrounding lands and waters than an underground cable and road. Also, the visual and landscape impact of the overhead line was assessed as not significant due to the existing overhead lines already in the area.

2.5 CONSULTATION

2.5.1 Consultation during the Cushaling Wind Farm EIAR

The Kilcumber Bridge 110kV substation was part of the EIAR for the Cushaling Wind farm project. The grid route has changed but in its original form the substation underwent consultation with the wind farm. This consultation included:

- Public consultation with the local community by a nominated community liaison officer;
- Pre-Pre-Planning Meeting with Offaly County Council;
- Consultation with government and non government bodies with an interest; and
- Consultation with community groups relevant to the area.

2.5.2 Consultation for the stand alone Kilcumber Bridge 110kV substation

As a stand alone project the Kilcumber Bridge 110kV substation has undergone the following consultation:

- An information letter with a map regarding the proposed development was sent to all houses within 1km of the proposed substation;
- Pre-application consultation with An Bord Pleanala;
- Consultation with Eirgrid as operators of the Irish electricity grid;
- Consultation with government and non government bodies with an interest; and
- Consultation meeting with Offaly County Council.

2.6 CONSTRUCTION TIMELINE AND PERSONNEL

Depending on the outcome of the planning process and the grid application process, construction is expected to start in 2022 or 2023. The substation will be constructed first, followed by the grid connection over a period of 12 months. There will be an additional allowance of about two months for commissioning and handover to EirGrid. The total timeframe for the proposed project is therefore 14 months from start of construction to hand over to EirGrid.

Construction activities would generally take place between the hours of 8:00 a.m. and 6:00 p.m., Monday to Friday, and between the hours of 8:00 a.m. and 1:00 p.m. on Saturday, which equates to a 55-hour week of operation. A detailed Traffic Management Plan will be developed at the construction stage (or commenced during planning compliance stage if required) to ensure controls are in place with all suppliers coming to the project site.

It is estimated that approximately 30-35 personnel are required for the construction of the proposed substation.

3 ENVIRONMENTAL IMPACTS AND MITIGATION

The relevant environmental topics are described in this section. The key features of the existing environment are highlighted. The potential damage or impact is included and the mitigation measures which can reduce or remove those impacts are summarised. Further detail is provided in Volume 2 and Volume 3 of the EIAR.

3.1 POPULATION AND HUMAN HEALTH

The proposed site is located in a rural area close to an existing power generation plant and within an area characterised by commercial peat extraction and power generation. Settlement patterns in the area surrounding the proposed development are primarily in the form of one-off residential dwellings along the surrounding local and regional road networks. The closest residential property is about 200m to the east of proposed substation, with further dwellings to the south in the direction of Clonbulloge.

In the construction phase, it is envisaged that resources and labour will be sourced in the region where possible. Aggregates and concrete supply for road construction and foundations will be obtained from local quarries and suppliers, thus fuelling the local economy. It is envisaged that 30-35 people will be employed for the project.

As with any development, construction activities can cause a nuisance to the local community and are likely to pose temporary minor disturbances. The most notable of these disturbances relates to the generation of additional traffic on the local networks, generation of noise and safety implications. Disturbances will be temporary and will cease on completion of the construction works. Peak construction traffic will occur in the first two months and outside the peak morning and evening peak commuter times. The construction works will be managed to minimise the impact on the human environment and the local residents and to this end a Construction Environmental Management Plan has been prepared and will be implemented by the contractor on-site. The site will be managed in accordance with relevant safety and health regulations and guidelines, which will ensure a high standard of safety both for workers on site and the general public. With the mitigation measures in place, no significant negative impacts on the local human environment are expected.

There are no predicted major adverse operational impacts associated with the proposed development which would significantly negatively impact on the local community. The land-take for the proposed development has been kept to a minimum to allow only for installation of substation and power line infrastructure, thereby minimising changes in land-use in so far as possible. Potential electrical risks associated with electrical infrastructure will be prevented by the provision of adequate fencing and security in compliance with health and safety regulations relating to high voltages.

The project will facilitate the transmission of renewable electricity generated by projects in the area and in doing so contribute to the reduction of greenhouse gas emissions reducing the risk of air pollution and thus risk to human health.

3.2 BIODIVERSITY

The predominant habitat within the site is improved agricultural grassland, with smaller areas of wet grassland, drainage ditches, hedgerows, scrub and the Figile River approximately 70m east of the proposed substation. See **Figure 3** below for the site habitat map. Most of the site is considered 'lower value' improved agricultural grassland. However, the hedgerows, scrub, wet grassland and water features are considered 'higher value' habitats and are classified as Key Ecological Receptors (KER's). Other KER's identified at the site include bats, badger, otter and brook lamprey.

Impacts were identified that could potentially have an adverse effect on some of the KERs. These include habitat loss, disturbance and fragmentation and water quality. Best practice and mitigation measures were incorporated into the project design to avoid or reduce impacts where possible. For example, two areas of badger activity were identified during field surveys and the footprint of the proposed development was altered to ensure these were avoided. Any remaining potentially significant impacts were fully evaluated and mitigation measures proposed to ensure that all effects on KERs are adequately addressed and no significant residual effects are likely to remain.

Construction phase mitigation measures include installation of silt traps and straw dams on site drains to protect water quality, completion of badger, otter and bat surveys prior to site clearance/construction activity and removal of vegetation outside of breeding seasons. Operational phase mitigation measures include the replanting of removed hedgerow, the installation of bat and bird boxes and the creation of small artificial ponds for amphibians.

A Construction Environmental Management Plan (CEMP) setting out the key environmental management issues associated with the construction and operation of the development will be implemented. A programme of ecological mitigation measures will be incorporated into the CEMP. A suitably qualified and experienced project ecologist / environmental manager will be employed during the construction phase to monitor controls and ensure mitigation measures are in place. The ecologist / manager will be awarded a level of authority and will be allowed to stop construction activity if there is potential for adverse ecological effects and will ensure that all the mitigation measures outlined are implemented.

Provided that the proposed development is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant effects on ecology are not anticipated.

The cumulative impacts of the proposed substation and grid connection were evaluated with other land-uses and other operational and planned developments in the area. The assessment concluded that the potential for cumulative impacts are considered unlikely to be significant.



Figure 3: Habitat Map

3.3 LAND AND SOILS

The site is underlain by cutover peat which has been improved and drained to render it suitable for agricultural purposes. It is situated in a low-lying area and is generally very flat with a slight slope dipping east towards the River Figile. The surrounding lands are predominantly used for peat extraction or agriculture.

The existing environment is highly modified due to agricultural practices. These activities have disturbed the subsoils throughout large portions of the site. The existing site drainage is characterised by man-made drainage channels.

The development will result in a permanent change of land-use from agriculture to power transmission. The potential additional impacts of the development on the land and soils environment are the excavation of topsoil and subsoil during the construction of the substation and access road and the storage and management of those materials. However, the volumes to be excavated are relatively small (~1,800m³) and they will be re-used on site for grading and landscaping. Good site practices and operating in accordance with a Construction Environmental Management Plan will further limit the impact on the land and soils environment.

The potential impact on the land and soils of the site due to excavations will be lower during operation and maintenance, as the majority of excavations will have been reinstated.

Given the size and highly modified nature of the site and in light of the works and the mitigation measures proposed, it is considered that there will be no significant impact to the land and soils environment due to the construction and operation of this project.

3.4 WATER

The Figile River is approximately 70 meters to the east of the substation. The grid connection route crosses over agricultural fields as well as the River Figile. The site generally drains towards the River Figile, which is within the Barrow River Basin District (RBD). The field boundaries consist of hedgerows with land drains that direct drainage towards the River Figile.

The site is poorly drained most likely to the nature of the peaty underlying soils. The quality of the Figile River near the site was rated by the EPA as 'Moderate /Q3-4' in 2017, most likely as a result having been highly worked and dredged to facilitate drainage of the area.

The subsoil has low permeability and the groundwater vulnerability ranges from low (in the northwest) to high (near the Figile River), resulting in a moderate risk of groundwater contamination. The depth of groundwater table drawdown will generally be insignificant at the substation area as no major excavations are planned, instead the ground level will be raised by about 1-1.6m through the importation of rock onto the site.

During construction and operation/maintenance phases of the proposed development, a number of activities will take place on site, some of which will have the potential to affect the water quality at the site. The main potential impact to water is suspended solids (silt) pollution from physical disturbance of ground, changes to surface water flows, as well as concrete and fuel contamination.

Construction works are designed to be minimal near the Figile River and only require the installation of wooden poles for the OHL. The riparian border along the River Figile will remain intact.

The proposed site drainage has been designed in line with accepted best practice and industry guidelines and will include erosion and sediment control measures that will offset any potential effects. Emergency spill kits will be kept on site for use in emergencies. Measures detailed in the Construction Environmental Management Plan will prevent any adverse impacts on water quality, for example the installation of silt traps and straw dams and regular inspections of drains, the installation of fuel/oil interceptor at the substation, supervision of concrete pours and a dedicated, bunded waste storage area. An environmental manager will be appointed to supervise all construction activities that may have an environmental impact.

When the mitigation measures are implemented in full, a high degree of confidence can be assured that any effects on the receiving hydrological and hydrogeological environment will be minor. Mitigation measures will be monitored throughout the construction and operation phases. It is considered that the proposed project design including control measures together with mitigation measures will ensure that no significant impact occurs to adversely affect surface water quality, surface water flows or groundwater quality.

3.5 AIR AND CLIMATE

The predominant use of the site and immediate surrounds is low intensity agriculture, peat extraction and power generation. The site is in a rural area and the closest residential property is approximately 200m to the east of the substation on the R401. There is a further cluster of residential dwellings approximately 220m to the east of the southernmost pylon. The nearest large settlement is 6km north at Edenderry.

The largest industrial source of air pollution is adjacent to the site, the peat and biomass burning Edenderry Power Station, emitting the equivalent of about 680,000 tonnes of CO₂ per annum. Other impacts on air quality in the area include the traffic to and from the power plant, other commuting traffic and a quarry further north. The minor influences on air quality in the area include traffic utilising the local road networks and agricultural activities. The EPA air quality index rates the area as having 'Good' air quality.

The main potential impacts of the proposed development on air quality in the receiving environment during the construction stage are fugitive dust and vehicle emissions associated with various construction activities such as earthworks, placement of hardcore surfacing and tarmac, construction of control building, compound infrastructure and perimeter fence and construction of the cable connection.

It is recommended that best practice is adhered to during the construction phase in order to minimise the potential for fugitive dust emissions in particular. This will be achieved by the implementation of a dust minimisation plan as part of the CEMP. Given that there is an intervening distance of 200m between the nearest sensitive receptor and dust emissions sources, with recommended best practice in place it is very unlikely that any receptors will be affected by fugitive dust emissions during construction or that the emissions will have an adverse impact on local ambient air quality.

There will be no potential significant impacts on air quality during the operational phase of the development as there are no emissions to atmosphere.

Once operational, there will be no negative residual impacts regarding air quality. The operation of the 110kV substation will provide a grid connection for renewable energy projects in the locality. The enabling of these renewable energy projects will have a positive effect on climate change.

3.6 NOISE

The main noise source from a high voltage substation is from the transformer(s). The noise is generally recognisable as a steady hum which arises from electric and magnetic forces within the transformer. Infrequent noise may also arise from voltage changes (tap changer) and cooling fans under high loads. There will be no transformers in this substation compound.

Other noise sources from electrical infrastructure include Aeolian noise (wind through power lines), Corona noise (hiss or crackling from high voltage power lines) and potentially noise from faulty equipment.

Construction noise will occur during excavation and earth moving, laying of roads and hard standings, and transportation of materials. The construction phase will be temporary and of short duration, estimated to be 12 months.

The proposed substation compound will share the same NSL's (noise sensitive receptors) as the operational Edenderry Power Station, and the permitted Cushaling Wind farm, Battery Energy Storage System and Substation and the Cloncreen wind farm which is under construction.

Given the minor scale of the construction works (comparable to the erection of agricultural buildings) and the distance to the nearest receptor, approximately 400m away (distance from substation to non Bord Na Mona owned residential house), there will be no significant impact either standalone or cumulatively during construction.

Research has shown that noise from switch gear and alarms are not considered a significant source of noise primarily because of the infrequent use and short duration. Corona noise can occur at conductors and from overhead lines hardware. Corona noise at nuisance levels from 110 kV lines is rare and is typically associated with 400 kV lines.

Wind borne Aeolian noise is rare and evidence-based research has shown it not to be a significant source of noise (EirGrid 2016).

As there are no significant operational noise emissions from the proposed development, there will be no cumulative impacts.

Noise emissions from the proposed development either standalone or cumulatively will not increase noise levels at the nearest noise sensitive receptors above what is already permitted.

3.7 LANDSCAPE AND VISUAL IMPACT

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right, and on people's views and visual amenity. The significance of the effect is a judgement based on the sensitivity of the receptor, combined with the magnitude or degree of change. This process is the same for landscape and visual effects. The assessment of landscape and visual effects included a desktop study, review of the proposed development and photomontages (visualisations), and site visits.

Landscape effects on the fabric of the landscape and its receptors are closely related to the nature and extent of visibility. The site is located in an area of Offaly which is designated in the Offaly County Development Plan as having 'low' sensitivity. The terrain is typically flat and therefore views are generally restricted by the layers of dense hedgerow vegetation. The proposed development is likely to be difficult to discern beyond approximately 2km and even if visible, is not likely to give rise to significant landscape or visual impacts beyond this distance. The nearest protected view is in the townlands of Grovesend and Coole, with views south towards the peatlands. It looks in the direction of the proposed site but at a distance of over 10km significant impacts as a result of the proposed development are highly unlikely due to the modest scale of the proposed development relative to the notable intervening distance.

The main effect of the proposed development will be an increased sense of industrialisation and intensity of built development within the immediate landscape setting. The scale and intensity of the proposed development will have some influence on the landscape of the immediate surrounds of the site; however, such effects are localised and beyond approximately 500m, it is likely to be perceived as an ancillary element to the adjacent power station. From the R401, the existing overhead line infrastructure contributes a degree of visual complexity which will assist the proposed overhead line in being visually absorbed. For most people driving over Kilcumber Bridge on the R401, the view towards the proposed development will be a fleeting glimpse. The flat nature of the landscape means that intervening vegetation is effective in screening or providing a setting for the substation.

A set of photomontages were produced (**EIAR vol. 3 Appendix 5**) to visually represent the proposed development during the operational phase and future cumulative scenario to allow for a comprehensive cumulative impact assessment in combination with the nearby existing and permitted developments. The magnitude of visual effects will not be greater than Medium-Low at any of the selected viewpoints during the construction or operational phases, even at the closest receptor locations where clear views towards the proposed development site would be afforded from the site entrance.

The potential for landscape and visual impacts was taken into consideration during site selection and design stages. The subject site was chosen to minimise landscape and visual impacts as it is adjoining the permitted Cushaling wind farm substation, and the existing Edenderry Power Plant and the existing Cushaling 110kV substation and is set back and screened from the R401 and receptors.

3.8 CULTURAL HERITAGE

This cultural heritage chapter contains an assessment of the likely impacts of the proposed development on the archaeological and wider cultural heritage.

There are no archaeological monuments or artefacts known or recorded within the proposed development site. The nearest recorded monuments are 1.3km away to the north.

Given the substantial number of previous archaeological sites discovered in the nearby peatlands of Ballykilleen townland and also the proximity of the Figile River, there is a medium to high possibility that the construction works will impact on any unknown potential subsurface archaeology.

There is no impact anticipated on Kilcumber Bridge by the construction phase as the bridge is situated c.70m from the nearest proposed substation structure.

Given the extent of archaeological sites in the wider area, licensed archaeological test excavations at the site should be undertaken in advance of construction to include the elements of the proposed development which will involve ground disturbance, i.e. the substation compound and proposed pylons for the overhead line grid connection.

Should archaeology be discovered in any of the proposed licensed testing, additional archaeological work, including excavation, may be required.

3.9 TRAFFIC AND TRANSPORTATION

A traffic and transportation assessment was undertaken to quantify and assesses the impact of traffic generated by the proposed development on the existing local road network, during construction and operational phases, and recommends mitigation measures, as appropriate.

The proposed substation site is located on the east side of the R401 Regional Road, south of Edenderry. The R401 extends from Kildare in the south, via Rathangan, to Kinnegad in the north, via Edenderry. The speed limit on the R401 near the site is 80km/h.

Existing baseline traffic volumes on the surrounding local road network were established. This baseline included the biomass deliveries to the Edenderry Power Station. Construction traffic was estimated using the known amounts of construction materials that the development will need. The significance and duration of predicted impacts have been defined in accordance with EPA guidelines.

Construction will take place over a 12-month period. The works will require the importation of a total of 2,982 loads of construction materials (mostly made up of the hardcore rock deliveries in the first two months). Construction materials would be imported using standard heavy vehicle delivery trucks with capacities of 10 m³ and 20 tonnes. Peak heavy vehicle traffic volumes generated by the delivery of construction materials would be up to 60 heavy vehicles per day, both to and from the site. These volumes will occur in the first two months of construction when the rock hardcore will be delivered to site. Highest peak hour heavy vehicle traffic volumes would be up to eight heavy vehicles, both to and from the site. This peak will happen outside of the morning and evening peak commuter times.

The assessment found that the surrounding road network has capacity to absorb the additional traffic that will be generated during the construction works. Traffic during the operational phase will

be negligible as it will comprise occasional maintenance visits. This would generate a relatively low volume of vehicles, including occasional heavy vehicles.

Mitigation of the traffic impacts has been considered in the design stage. A detailed Construction Traffic Management Plan will be developed at the construction stage (or commenced during planning compliance stage) to ensure controls are in place with all contractors and suppliers coming to the project site, including coordination with the permitted Cushaling Wind Farm construction. Offaly County Council and local residents will be consulted and informed of any traffic control measures or road works to ensure minimum disruption and inconvenience. No additional mitigation measures are proposed as no significant adverse impacts are envisaged.

The overall conclusion is that the proposed development would not have a significant adverse traffic impact on the surrounding road network.

3.10 MATERIAL ASSETS

Material assets are defined as resources of intrinsic value which may be of either natural or human origin. Material assets that were addressed which were not outlined in other chapters include electrical infrastructure, water supply, sewerage and gas infrastructure, natural resource use and waste management.

The proposed development is on a greenfield site which does not contain any underground utilities or services currently. The proposed grid connection will be a 400m-long overhead line looped in/out to the existing overhead 110kV line supported by wooden poles and pylons. The proposed grid connection location has been chosen to best integrate with the existing electrical infrastructure.

The proposed Kilcumber Bridge 110kV substation will not be linked to the water mains or the wastewater system. There is no underground pipeline infrastructure for water supply or wastewater collection on, or within the vicinity of, the site currently. Water needs for construction activities will be low and limited to truck washing, dust suppression and sanitary facilities. It is proposed that this water requirement will be provided by a rainwater harvesting system with a water cooler system supplying the potable water in the canteen facilities. Wastewater generated will be stored in onsite wastewater tanks which will be emptied periodically by a licensed contractor.

There will be no impact on the proposed preferred route of the proposed Irish Water Water Supply Project (WSP) for the Eastern and Midlands Region.

The types of wastes to be generated would be similar to established construction waste streams and would not require unusual or new treatment options. Waste volumes are not likely to be significant as to require new permitted treatment, storage and disposal facilities. Any waste generated on site will be segregated at source and will be taken off site to an appropriate facility by an authorised contractor. All waste streams will be identified within the contractors waste management plan at the outset and a defined area will be identified for the segregation and storage of waste. Adequate signage and notices will be provided on site along with training and supervision of staff to ensure compliance with waste management practice.

There will be no significant, negative, residual impacts to material assets. The overall purpose of the proposed substation and grid connection is to create a new asset that can receive electricity generated by renewable energy projects in the area, including the recently consented Cushaling Wind Farm, and transmit the electricity to the National Grid. In doing so, the development will contribute to the reduction of greenhouse gas emissions and Ireland's commitment to meet EU and national emissions targets.

3.11 INTERACTION OF THE FOREGOING

There is potential for interactions between one aspect of the environment and another. Where relevant, interactions are already addressed within each of the individual chapters of the EiAR. The purpose of this chapter is to draw attention to significant interaction and interdependencies between one topic and another.

A matrix has been generated to summarise the relevant interactions and interdependencies between specific environmental aspects and a significance rating has been given (see **Table 1** below).

The interactions relate mostly to construction phase activities.

The interaction between biodiversity and roads/traffic is expected to be greatest during the construction phase. These impacts have been assessed in the Biodiversity Chapter. Construction scheduling and the recommended mitigation measures set out in the project CEMP will reduce any impacts.

Some interactions will occur between land/soils, water and roads/traffic during the construction works. Soil and rock will require excavating to accommodate the footprint of the substation and the access road. These construction works also have the potential to negatively impact on surface water. The project will be developed in line with the drainage proposal for surface water management detailed in the Chapter 2 of this EiAR and the CEMP as part of the civil works to ensure adequate protection of water courses during the construction phase.

Site activities during the construction phase have the potential to give rise to some water pollution, and consequential indirect effects (such as disturbance and deterioration of habitat quality) on flora and fauna that use that use water within the same catchment. A CEMP has been designed for the project to ensure implementation of control and mitigation measures to protect water quality. The site drainage system will remain for the operational phase and is designed to minimise significant effects on biodiversity.

Table 1 Matrix of Environmental Factor Interactions

	POPULATION AND HUMAN HEALTH	BIODIVERSITY	LAND AND SOIL	WATER	AIR AND CLIMATE CHANGE	NOISE AND VIBRATION	LANDSCAPE AND VISUAL	CULTURAL HERITAGE	TRAFFIC	MATERIAL ASSETS
POPULATION AND HUMAN HEALTH					++					
BIODIVERSITY										
LAND AND SOIL										
WATER										
AIR AND CLIMATE CHANGE	++									++
NOISE AND VIBRATION										
LANDSCAPE AND VISUAL										
CULTURAL HERITAGE										
TRAFFIC										
MATERIAL ASSETS	++				++					

Construction
Operation
++ Positive effect

Minor interactions include temporary effects on landscape and visual resources during the construction phase e.g. use of construction machinery. The construction phase has the potential to generate noise and dust, which could create a temporary nuisance. The construction phase of the project will also give rise to increased traffic and is likely to create some short-term inconvenience for other road users.

Where any potential interactive negative effects have been identified in the above, a full schedule of appropriate mitigation measures have already been included in the relevant chapters (Chapters 3 - 12) of the EIAR; summarised in Chapter 14. The implementation of these mitigation measures will reduce or remove the potential for these effects. Information on potential residual effects, and their significance, is also given in each chapter.

During the construction phase, the proposed substation development may impact on the local environment; however mitigation measures, good site management and best construction practices will mitigate and reduce identified impacts.

4 MITIGATION AND MANAGEMENT OF ENVIRONMENTAL IMPACTS

Environmental impacts during construction will be managed through the design and implementation of a Construction and Environmental Management Plan (CEMP). This will address working hours, traffic management, control of pollution, waste management, noise, dust and vibration.

Potential environmental impacts during operation can be managed and the necessary plans and controls are incorporated in the mitigation measures in this EIAR.

With the implementation of the proposed mitigation measures there will be no significant residual effects as a result of the proposed project.