

3 POPULATION AND HUMAN HEALTH

3.1 INTRODUCTION

This Chapter discusses the likely significant effects on population and human health arising from the proposed development, the Kilcumber Bridge 110kV substation and grid connection in the townlands of Ballykilleen, Cloncreen and Ballinowlart North, Co. Offaly. The development is approximately 6km south of Edenderry on the R401. A full description of the proposed development, development lands and all associated project elements is provided in **Chapter 2** of the EIAR. Focusing on the area local to the proposed development, the human environment in the area is examined in terms of population and settlement, economic activity, employment, land use, tourism and amenities. The potential visual impact is assessed separately in **Chapter 9**. The chapter has been prepared having regard to information on the local population and land-use and in consideration of any human health impacts via environmental pathways from aspects such as soil, air, water or changes to material assets.

The assessment comprises:

- A description of the existing human environment;
- Prediction and characterisation of impacts;
- Evaluation of impact significance;
- Consideration of mitigation measures, where appropriate.

Information has been gathered from publicly available sources, including Local Authority Plans (for County Offaly and Kildare), the Central Statistics Office (CSO), Fáilte Ireland, Coillte Outdoors, Midland Regional Planning Guidelines and the Met Eireann website.

3.1.1 Scope of Assessment

The assessment considers the entirety of the proposed development including the proposed 110 kV looped substation (referred to as the Kilcumber Bridge 110kV substation and 110kV overhead line (OHL) grid connection to the existing Cushaling-Mount Lucas 110kV OHL.

The following legislation and published guidance has been consulted in undertaking this assessment:

- EU Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (2011 EIA Directive);
- EU EIA Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment (2014 EIA Directive);
- EU (Planning and Development)(Environmental Impact Assessment) Regulations 2018 (S.I. No. 216 of 2018);
- Revised (draft) EPA Guidelines on the Information to be Contained in Environmental Impact Reports (EPA, August 2017);
- Revised (draft) EPA Advice Notes for Preparing Environmental Impact Assessments (EPA, September 2015).

The 2015 draft EPA Advice Notes state that ‘While most developments by people will affect other people, the section of an EIS dealing with this topic concentrates on those topics which are manifested in the environment, such as employment and housing areas, amenities, extended infrastructure or resource utilisation and associated emissions’. Issues such as commercial competition, zoning, property prices, agri-business and other social and economic issues are dealt with by more specific instruments (such as the Planning Acts). **Table 3-1** outlines those issues which the EPA guidance suggests may be examined as part of the human beings study.

Table 3-1 Issues relevant to the Human Environment

Topic Area	Potential Issues
Economic Activity	- will the development stimulate additional development and/or reduce economic activity, and if either, what type, how much and where?
Social Consideration	- will the development change patterns and types of activity and land use?
Land-use	- will there be severance, loss of rights of way or amenities, conflicts, or other changes likely to ultimately to alter the character and use of the surroundings?
Tourism	- will the development affect the tourism profile of the area?
Health and Safety	- vectors through which human health impacts could be caused e.g. will there be risks of death, disease, discomfort or nuisance?

Having regard to the above, the topics considered in this assessment are as follows:

- Population and Settlement Patterns;
- Economic Activity and Employment;
- Land-Use;
- Tourism and Amenities;
- Human Health and Wellbeing (with reference to environmental aspects).

3.1.2 Methodology

The methodology used for the study included desk-based research.

3.1.2.1 Desk Study

A desk study was undertaken to identify potential impacts, either positive or negative, on the human environment that could cause change in the ‘quality of life’ as a result of the construction and operation of the proposed development. The local human environment is made up of a number of groups. These include those who reside in, work in, visit, or use the local road networks in the area. Whilst no single set of persons can be discerned, the local residential population is deemed to be the most sensitive group in terms of those most likely to experience any identified significant impacts.

Based on a review of the characteristics of the proposed development, any potential negative impacts on the local human environment are considered to include the following human health/wellbeing and nuisance concerns:

- Dust emissions from construction activities;
- Noise emissions during construction and operation;
- Public safety during construction activities and operation;
- Traffic nuisance during construction and operation;
- Visual impacts during operation.

Each of the above issues has been fully assessed and documented in other chapters of this EIAR as set out in **Table 3-2**. These assessments were reviewed to inform this study.

Table 3-2 Potential Nuisance & Health and Safety Issues & Relevant EIAR Chapter

Potential Nuisance / Health & Safety Issue	Chapter Addressed In
Dust emissions from construction activities	Chapter 7 Air and Climate
Noise emissions during construction and operation	Chapter 8 Noise and Vibration
Public safety during construction activities and operation	Chapter 2 Description of the Proposed Development
Traffic nuisance during construction and operation	Chapter 11 Traffic and Transportation
Visual impacts during operation	Chapter 9 Landscape and Visual

The following potential positive impacts were also identified during the review:

- Positive impact of provision of substation to enable local renewable energy projects to connect to the National Electricity Grid;
- Positive impact of creating local construction jobs for duration of 12 months;
- Positive impact of planning contribution fees that the local authority will utilise to fund services within the county;

The following resources were also consulted to assemble information on the local receiving environment:

- Central Statistics Office (CSO) demographic data for the area;
- Offaly County Development Plan 2014-2020;
- Edenderry Local Area Plan 2017-2023;
- Fáilte Ireland website (www.failteireland.ie);
- Discover Ireland website (www.discoverireland.com);
- Coillte Outdoors (www.coillteoutdoors.ie);
- Tourism websites (www.visitoffaly.ie, www.irishtourist.com, www.offaly.ie)

3.1.2.2 Assessment Criteria

Determination of the significance of an impact will be made, where practicable, in accordance with the Glossary of Impacts outlined in EPA *draft Guidelines on Information to be contained in environmental impact assessment reports (2017)* as outlined in **Table 3-3** below.

Table 3-3 Glossary of Impacts

Quality of Effects	Positive	A change which improves the quality of the environment
	Neutral	No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error
	Negative /adverse	A change which reduces the quality of the environment
Significance of Effects	Imperceptible	An effect capable of measurement but without significant consequence
	Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences
	Slight	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities

	Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
	Significant	An effect which, by its character, magnitude duration or intensity alters a sensitive aspect of the environment
	Very Significant	An effect which, by its character, magnitude duration or intensity alters most of a sensitive aspect of the environment
	Profound	An impact which obliterates sensitive characteristics
Duration of Effect	Momentary	Effects lasting from seconds to minutes
	Brief	Effects lasting less than a day
	Temporary	Effects lasting less than a year
	Short-term	Effects lasting one to seven years
	Medium-term	Effects lasting seven to fifteen years
	Long-term	Effects lasting fifteen to sixty years
	Permanent	Effects lasting over sixty years
	Reversible	Effects than can be undone e.g. through remediation or restoration
	Frequency	How often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
Types of Effects	Indirect	Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway
	Cumulative	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effect
	‘Do Nothing’	The environment as it would be in the future should the subject project not be carried out.
	‘Worst case’	The effects arising from a project in the case where mitigation measures substantially fail.
	Indeterminable	When the full consequences of a change in the environment cannot be described
	Irreversible	When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.
	Residual	The degree of environmental change that will occur after the proposed mitigation measures have taken effect.
	Synergistic	Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SO _x and NO _x to produce smog).

3.1.2.3 *Statement on Limitations and Difficulties Encountered*

No limitation or difficulties were encountered during the preparation of this assessment.

3.1.2.4 *Competency of Assessor*

The assessment was completed by Valerie Heffernan of MWP. Valerie is an Environmental Scientist and holds a BSc in Biological, Earth and Environmental Science and an MSc in Geographical Information Systems and Remote Sensing. Valerie has worked as an environmental professional since graduating in 2015 and has been employed as an Environmental Scientist with Malachy Walsh and Partners since 2018. She has considerable experience in Wind Farm and Solar Farm development and has had input in a variety of projects including wind energy developments, marine and solar energy developments.

3.2 EXISTING ENVIRONMENT

3.2.1 Site Location and Description

The proposed development site is in the townlands of Ballykilleen, Cloncreen and Ballinowlart North, Co. Offaly. Grid Ref. (ITM) Easting = 660810, Northing = 726820. The proposed development is opposite the Edenderry power station and approximately 6km south of Edenderry on the R401. The site is 3.7km north of Clonbulloge at its closest points, as shown in **Figure 3-1**. Other population centres in the area include Portarlinton located approximately 16.5km to the southwest, Rathangan (Kildare) approximately 7km to the south, Derrinturn (Kildare) approximately 6.5km to the northeast. Tullamore is located approximately 27km to the west of the site and Kildare Town approximately 16km to the southeast.

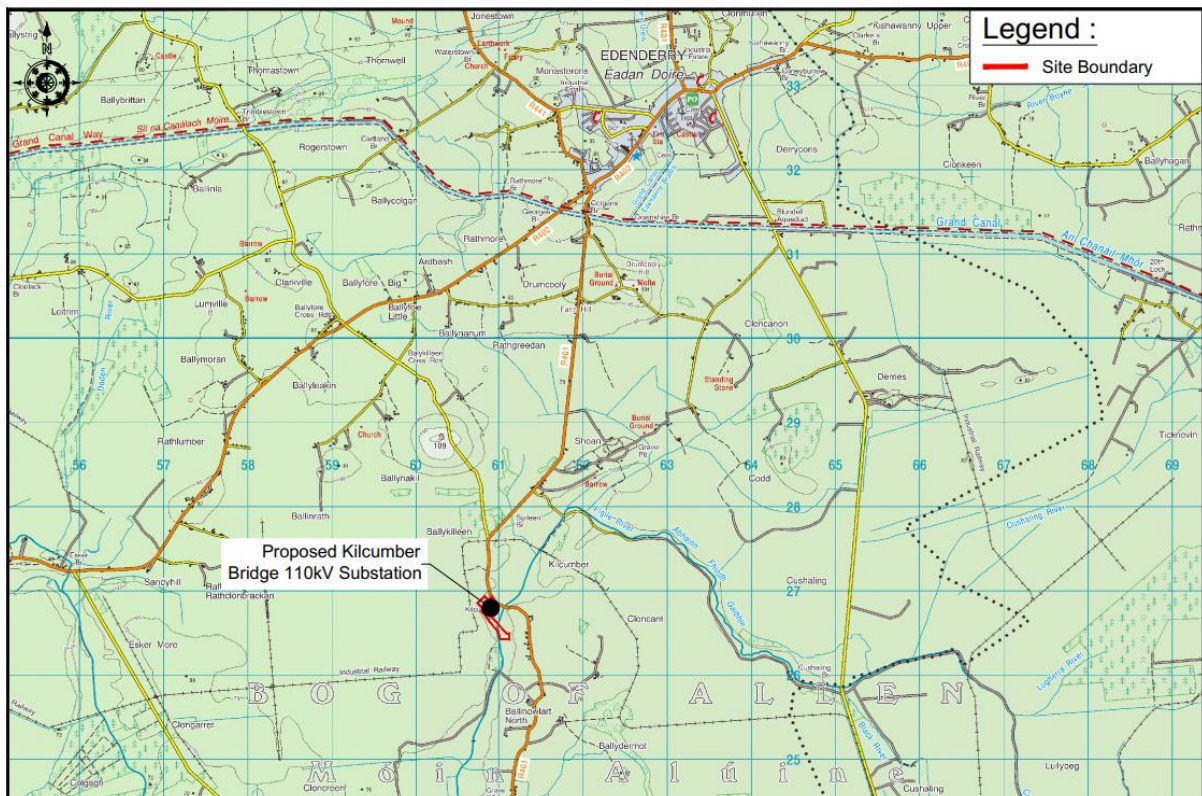


Figure 3-1 Site Location

The development will be on a site area of approximately 4 hectares (ha). The site is relatively flat with topography between approximately 65 and 70 metres Above Ordnance Datum (mAOD). The land-uses comprise cutover bog in the west and south, commercial forestry in the centre-north and a mix of wet grassland and improved grassland in the north and east. The substation site comprises improved agricultural grassland currently grazed. The site extends broadly northwest to southeast in agricultural fields and to the north and south of the Figle River.

3.2.2 Population and Settlement Patterns

Settlement patterns in the area surrounding the proposed development are primarily in the form of one-off residential dwellings along the local and regional road networks southeast of the Site. Refer to **Figure 3-2**. There are residential dwellings within 1km of a proposed development. The closest residential property is about 200m to the east of proposed substation as shown in **Figure 3-2**. There are further residential dwellings to the southeast of the site is relatively remote from settlement.

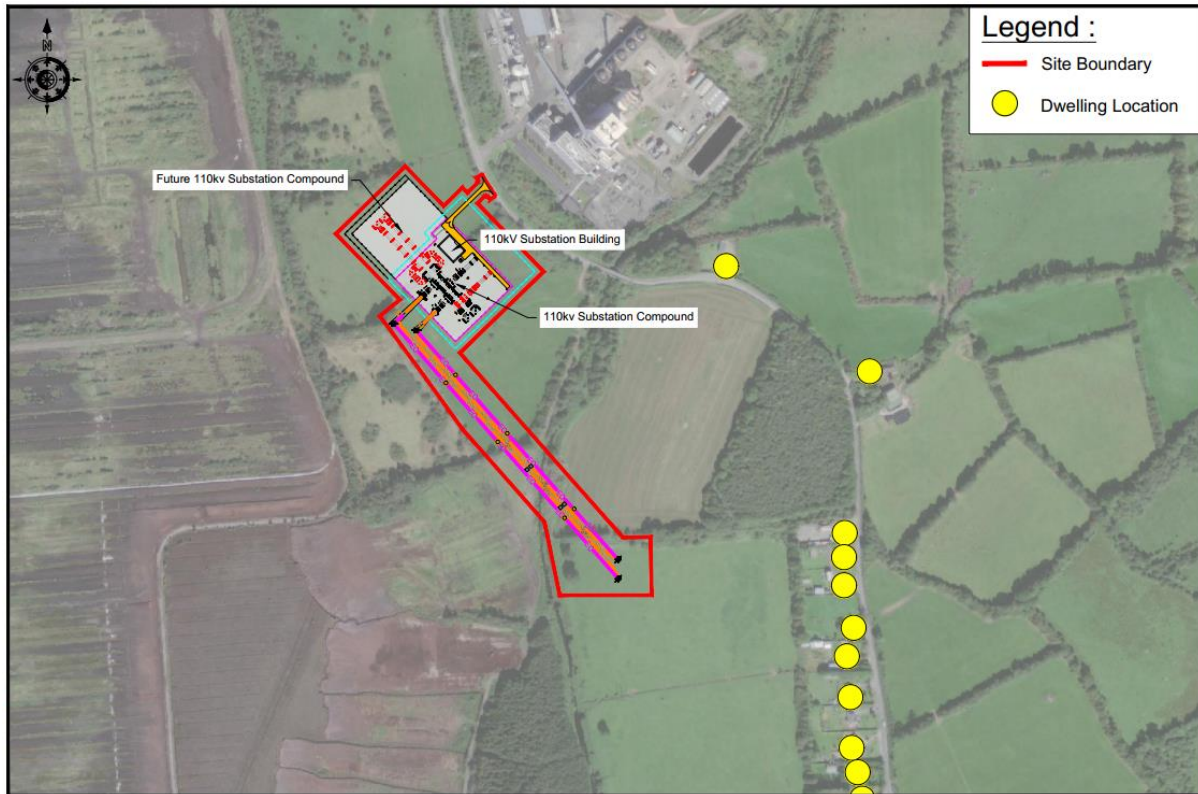


Figure 3-2 Residential Dwellings in the Vicinity of the Site

There are no hospitals or schools within 3km of the proposed substation or grid connection. The nearest schools and recreational facilities are in Clonbulloge and Edenderry. Lullymore Heritage and Discovery Park and Allenwood Enterprise Park, which contains a childcare facility, are located approximately 8.8km southeast and 13km east in Co. Kildare. In the wider surrounding area, the main settlements are Edenderry, Clonbulloge, Derrinturn and Rathangan, as shown on **Figure 3-3**. Other prominent developments in proximity to the proposed development site are Edenderry Power Station to the northeast, the permitted Cloncreen Wind Farm to the west/southwest, Anthony Cocoman Inert Landfill to the west/northwest and Sheridans Sand and Gravel Quarry to the northwest.

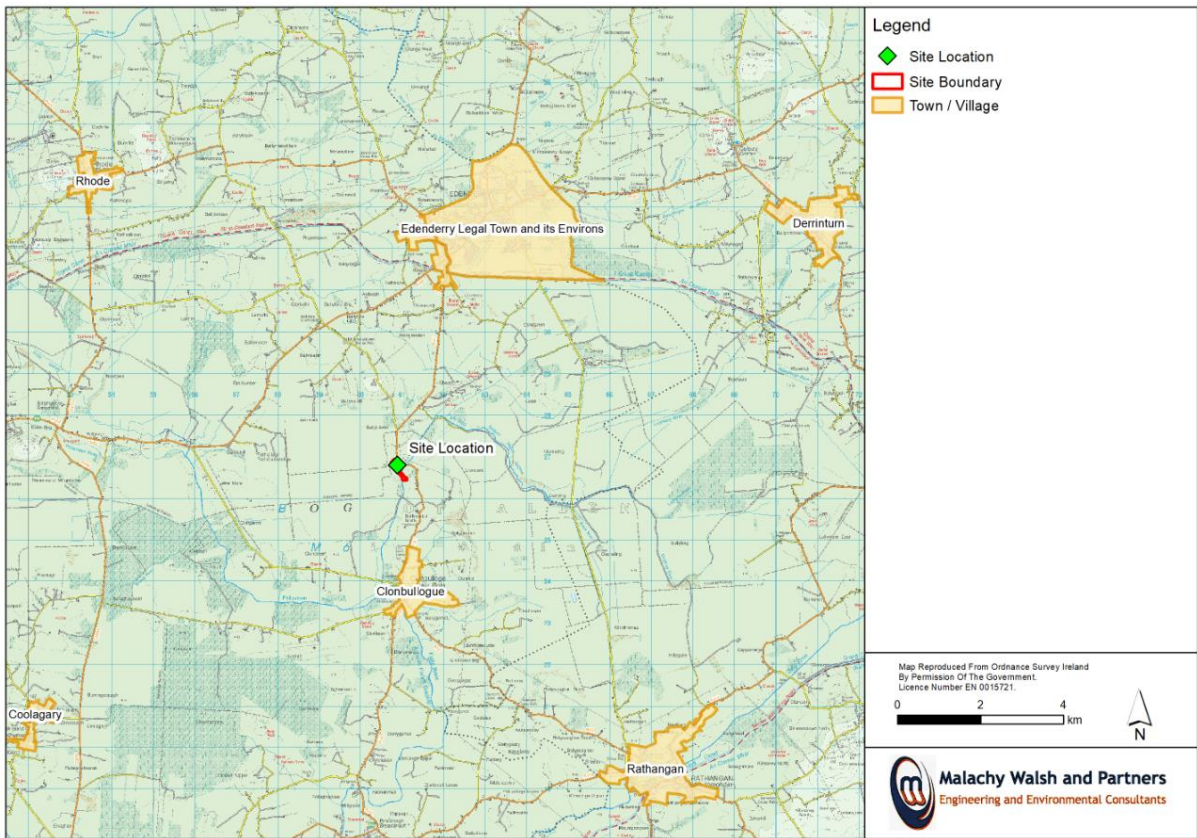


Figure 3-3 Towns and Villages in the vicinity of the Site

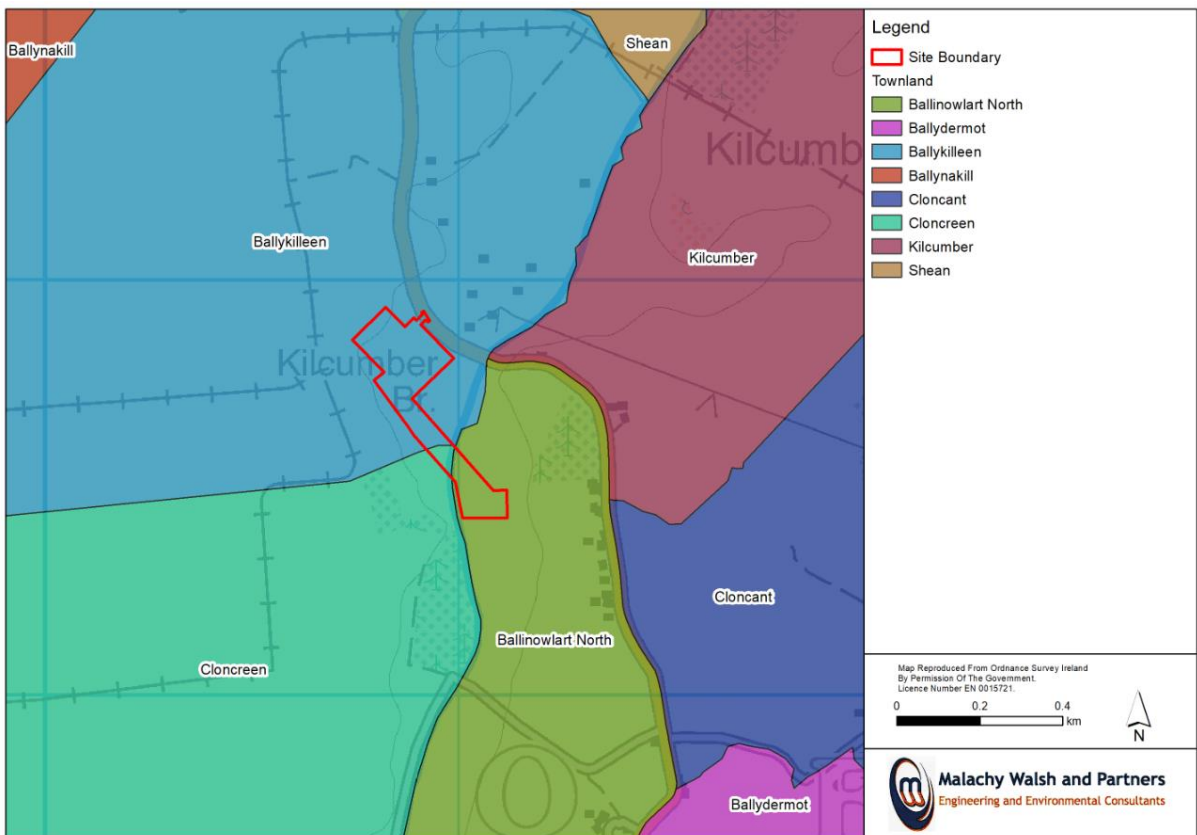


Figure 3-4 Townlands

The townlands of Ballykilleen, Cloncreen and Ballinowlart North in which the proposed development is situated are shown in **Figure 3-4**.

Population statistics acquired from the 2011 and 2016 Census of Population are provided in **Table 3-4** below. Overall in Co. Offaly, population figures have remained largely static since the 2011 Census. The total population of Co. Offaly according to the 2016 Census was 77,961, which was only a slight increase on the 2011 figure. Approximately 40% of the population is contained within the larger towns in the county, namely Tullamore, Birr, Clara, Edenderry and Portarlinton. Edenderry experienced a large 13.6% increase in population during this time, most likely attributable to its popularity as a commuter town for Dublin. There was an increase also in the Co. Kildare population (+5.8%) during the same period, with the total population increasing from 210,312 in 2011 to 222,504 in 2016. The population of Rathangan increased by 10% during this period.

Offaly remains largely rural in nature, with approximately 60% of its population residing in rural areas comprising a well-developed network of smaller towns and villages of less than 1,500 population (approximately 30% of population) and the open countryside (approximately 30% of population). Population statistics were acquired from the 2011 and 2016 Census of Population for Small geographical Areas, defined as areas of population generally comprising between 80 and 120 dwellings (**Table 3-4**). The majority of the proposed development is within Small Area 187035002 (Offaly), as shown in **Figure 3-5**. This area has experienced a moderate decrease in population (4%) since 2011. By comparison, Small Area 187020002 (Offaly) has experienced a 6% increase most likely as a result of the gradual expansion of the Clonbulloge urban area into its rural hinterland.

Table 3-4: Population Change from 2011 to 2016 (CSO Figures)

Location	2011	2016	% Change
Co. Offaly	76,687	77,961	+1.66%
Co. Kildare	210,312	222,504	+5.8%
Edenderry	6,477	7,359	+13.6%
Rathangan	2,374	2,611	+10%
Derrinturn	1,541	1,602	+4%
Clonbulloge	422	439	+4%
Small Area 187035002 (Offaly)	447	429	-4%
Small Area 187020002 (Offaly)	440	467	+6.1%
Small Area 087057001 (Kildare)	376	364	-3.2%

Source: Census of Population 2011 and 2016 including Small Area Population Statistics (SAPS)

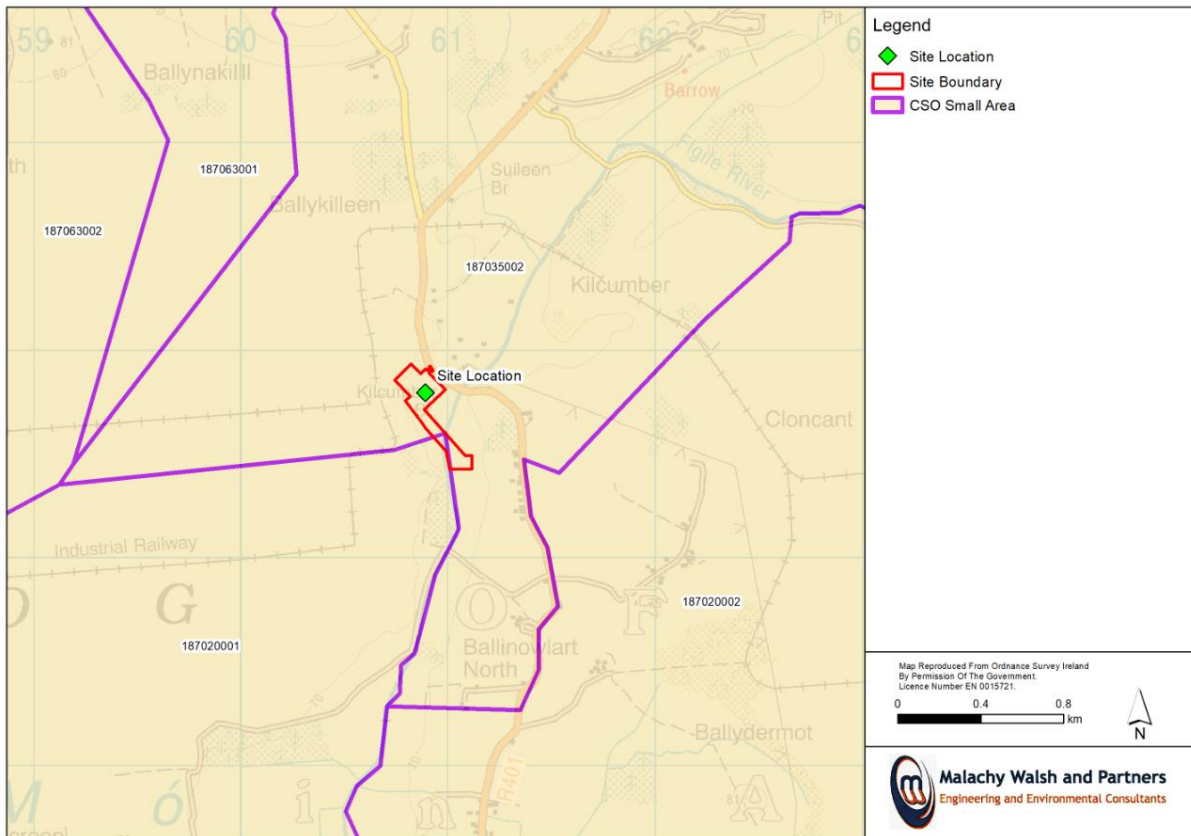


Figure 3-5 Small Population Areas

Edenderry is an historic market town that lies within the functional area of Offaly County Council approximately 31km to the east of Tullamore. With a population of 7,480 (Census 2016), Edenderry is placed as the second largest town in County Offaly in terms of population. The town is situated close to the source of the River Boyne which runs to the west and northwest of the town and forms the county boundary between Offaly and Kildare. The Grand Canal runs in an east to west direction south of the town and a harbour branches from this in a north-easterly direction right into the centre of town. The more recent history is strongly associated with settlement associated with peat extraction in the nearby Bog of Allen.

The Midland Regional Planning Guidelines (RPGs) 2010-2022, which include Co. Offaly, identify Edenderry as a Key Service Town within the Eastern Development Area (i.e. the part of the Midland Region closest to the Greater Dublin Area (GDA) and the associated radial road and rail routes). Since 2009, the Midlands Region has experienced a rapid fall off in development as a result of the economic downturn; however population has remained largely static with increases in some areas (see **Table 3-4**). The Offaly CDP 2014-2020 classifies Edenderry as a Tier 2 Key Service Town, which *“are important drivers for local economies in areas that are more remote from main population centres. Well established economic, administrative and social functions are provided within these areas”*. It is anticipated that during the lifetime of the Plan, the Key Service Towns will reinforce their role as key centres within the settlement hierarchy through the provision of employment opportunities, business, industry, education, tourism and infrastructure.

The Regional Planning Guidelines (RPGs) for the Greater Dublin Area 2010-2022 include Co. Kildare. In both the RPG’s and the Kildare CDP 2017-2023, Derrinturn and Rathangan are classified as *“Small Towns”* within the Hinterland of the Dublin Metropolitan Area. These are towns with populations of between 1,500 and 5,000 with *“good bus or rail links and circa 10km from large growth towns”*. In

terms of facilities, the RPGs recognise that small towns contain retail facilities mainly in the convenience category, and services such as primary schools, secondary schools, health clinics and sports facilities.

The proposed development is in a rural area, close to an existing power generation plant and within an area characterised by commercial peat extraction. The current Offaly CDP acknowledges there is a continued demand for one-off housing in rural areas and this is evident along the road network in the environs of the proposed site.

3.2.3 Economic Activity and Employment

The current Offaly CDP states that *“the economy of east Offaly was traditionally dependent on agriculture and peat production, however given this area’s proximity to the Greater Dublin Area, a trend of commuting emerged over previous development plan periods. The part of this region identified in the Midland Regional Planning Guidelines as part of the ‘Eastern Development Area’ within County Offaly experienced significant population growth since 1996. It is considered that the reservation of substantial lands for industrial, business / commerce and other employment uses within this area is appropriate and will assist in generating local employment, reducing commuter patterns and contributing to the sustainable development of this area. The Council recognises the contribution that the beneficial after use of cutaway peatlands and those lands in Bord na Móna ownership could play in providing employment opportunities within this part of County Offaly”*. The Midland RPG’s also acknowledge that there is potential for growth in employment generation in the ‘Eastern Development Area’ which contains Edenderry, due to the workforce availability and a key priority should be to resist any further large-scale residential development and to avoid over-development of towns. The provision of necessary social and community infrastructure to serve resident populations should be a priority.

The Offaly CDP states that one of the major challenges of the Plan is *“to ensure that enterprise and employment grows and develops in the county over the lifetime of the Plan, particularly in light of the significant impact the 2009 economic downturn had on the growth and development of the county over the last plan period when unemployment levels rose to 23.2%”* and also acknowledges that *“the reuse of cutaway bog will present significant opportunities in the energy sector”*.

As previously stated, Edenderry is classified as a Tier 2 Key Service Town, which *“are important drivers for local economies in areas that are more remote from main population centres. Well established economic, administrative and social functions are provided within these areas”*. It is anticipated that during the lifetime of the Plan, the Key Service Towns will reinforce their role as key centres within the settlement hierarchy through the provision of employment opportunities, business, industry, education, tourism and infrastructure. Edenderry is strategically located as a gateway between the Midland area and the Greater Dublin Area. A priority for villages such as Clonbulloge is to retain community and social facilities and to encourage service provision.

The key employers in Edenderry are the Rosderra meat factory, primary and national schools, retail and commercial services and industrial employment from the smaller scale industrial units throughout the town. A significant proportion of people living in the area commute to the Greater Dublin Area to work. The Edenderry LAP 2017-2023 acknowledges there is a need to focus on developing more employment opportunities within the town. As with the Offaly CDP, it states that the reuse of worked

out bogs in the area present employment opportunities in the area of renewable energy production and amenity, tourism and leisure.

3.2.3.1 *Employment Statistics*

According to the 2016 Census Small Area Population Statistics, the workforce in the region is employed in a diverse range of industries/sectors. Refer to **Table 3-5** below. The statistics show that majority of the local population are employed in manufacturing industries, professional services and commerce and trade. Of the 168 persons going to work in Small Area 187035002, 141 travel by car or van indicating that most residents travel to urban centres for work.

Table 3-5 Persons at Work by Industry

INDUSTRY	CSO Area Code			Total No. of Persons
	SA 187035002	SA 187020002	SA 087057001	
Agriculture, forestry, fishing	14	15	10	39
Building and construction	15	18	14	47
Manufacturing industries	38	34	22	94
Commerce and trade	24	39	31	94
Transport and communications	10	12	8	30
Public administration	10	3	3	16
Professional Services	48	22	25	95
Other	9	25	15	49
TOTAL	168	168	128	464

*SA = Small Area

Note: Small Area 187035002 overlaps with the Settlement of Clonbulloge

The lands surrounding the proposed development Site are mostly peatland and agricultural and from site visits to the area, it is evident that peat extraction and agricultural activities are dominant in the wider region. The visual dominance of the peat and agriculture industries are indicated by land use practices (Refer to **Section 3.2.4** and **Figure 3-6**).

3.2.4 Land-uses

The proposed development lands are comprised of agricultural lands in a rural setting. The surrounding land use is a mixture of peat bog, mixed forest, agricultural lands and a mineral extraction site (Edenderry Power Plant). Satellite imagery also indicate low density residential dwellings on the surrounding road network. According to the CORINE Land-use classification system (**Figure 4-6**), the following land uses apply to the proposed development site:

- 231 – Pastures
- 131 – Mineral Extraction site
- 412 Peat Bogs

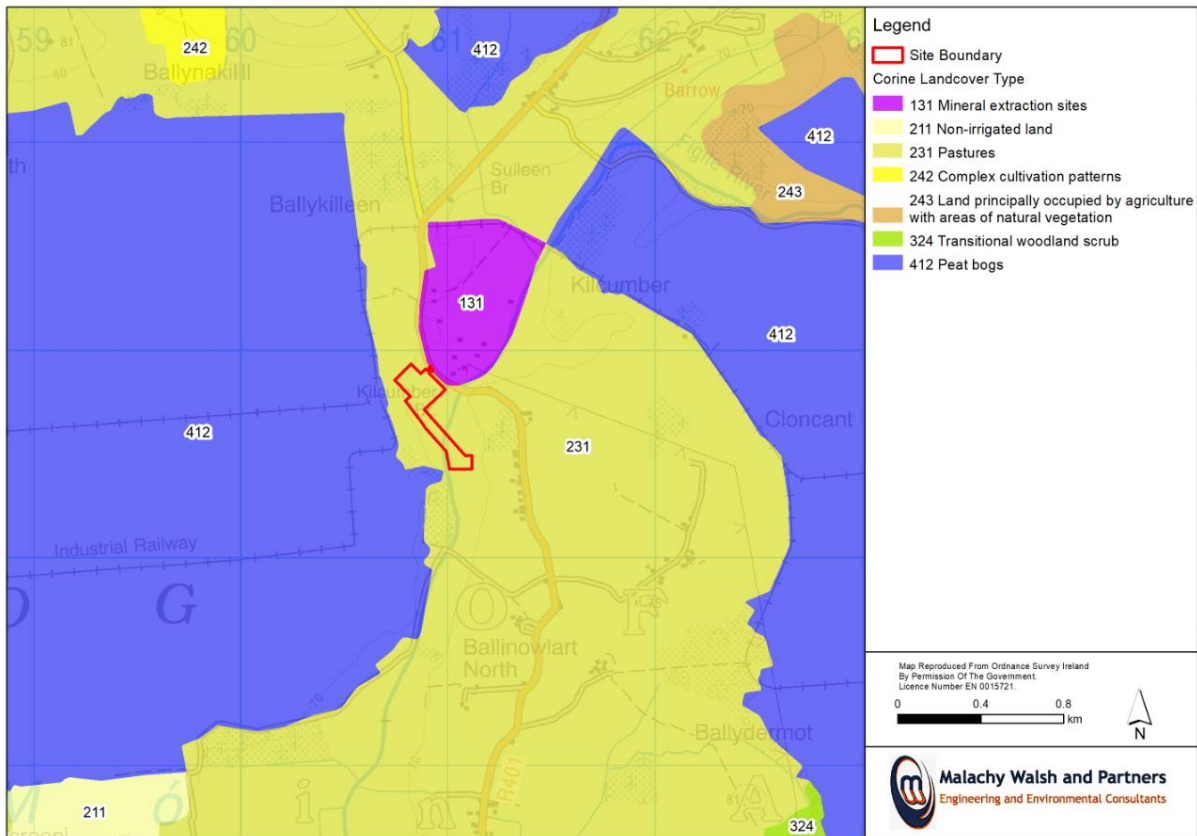


Figure 3-6 CORINE Land Cover

3.2.5 Tourism and Amenity Resources

The proposed development is located ca. 6km south of Edenderry, 16.5km northeast of Portarlington, 27km east of Tullamore 16km northwest of Kildare Town.

The River Shannon, Clonmacnoise Monastic Site, Birr Castle, Lough Boora Discovery Park and the Clara Bog Visitor Centre are all notable tourist attractions in Co. Offaly but are mostly confined to western side of the county. The Slieve Bloom Mountains extend over approximately 36,000 hectares across the borders of counties of Offaly and Laois and Offaly. Closer to the proposed development site, Edenderry is served by the Grand Canal, which is also an attractive walking route and provides a corridor of tourism related activity throughout the county. Whilst there are fewer tourism attractions in the eastern part of the county, *“it is Council policy to favourably consider tourism infrastructure development related to sport, recreation and information including boating, angling, walking and pony trekking routes, golf courses, adventure centres, and interpretive centres etc”*.

According to the Edenderry LAP, Edenderry town centre is concentrated around the long linear historical core running east to west from Market Square, a large square dominated by the Town Hall civic building, to an area at the Grand Canal Harbour, which is considered an untapped tourism resource. The Grand Canal Greenway, an historic trail from Ringsend in Dublin City to the River Shannon at Shannon Harbour in County Offaly, is currently under development. The route is punctuated by canal locks, lock houses and industrial architecture. The Offaly section of the Greenway stretching from Edenderry in the east to Shannon Harbour in the west, is currently being developed in phases. Phase 1 from Tullamore to Lough Boora Discovery Park (22km) is currently under construction and Phase 2 from Edenderry to Tullamore (33km), merging with an existing cycle track in Edenderry, is currently in development. The development of the Greenway is likely to result in an increase in walking and cycling-related tourism in the Edenderry area.

Map No. 1: Proposed Phases of Grand Canal Greenway



Figure 3-7 Grand Canal Greenway

Source: www.offaly.ie

Lullymore Heritage and Discovery Park is 24-hectare park with trails and a visitor centre in the Bog of Allen near Rathangan, Co. Kildare. The Park is located approximately 4km to the east of proposed substation. The facilities include a peatland biodiversity trail, famine cottage, woodland walks, café and car/bus parking. The Park is one of the leading visitor attractions in the Kildare region and won an Irish Tourism Industry Best Environmental Tourism Innovation Award in 2017.

3.3 IMPACT ASSESSMENT

This section discusses the likely impacts and key issues of the proposed project in relation to the human environment. The impact assessment is qualitative in that the assessment focuses upon whether the impacts on human beings would be positive or negative.

A full detailed description of the proposed project can be found in **Chapter 2**. The proposed project comprises the construction of control building, over and underground ducting/ cables, electrical pylons, fencing, electrical equipment including busbars, disconnects, breakers, sealing ends, lightning and lighting masts. The 110kV grid connection route assessed for the EIAR is as follows:

- A 400m overhead line (OHL) going south east from the substation and connecting into the adjacent existing Cushaling – Mount Lucas 110kV overhead line. The OHL would consist of a combination of steel lattice pylons and wooden pylons with a height of 12m.

3.3.1 Construction Phase Impacts

3.3.1.1 *Population and Settlement*

The project is unlikely to have an effect on the population of the area. As it is expected that construction personnel will be local there will be no impact to the overall population figures during the construction phase. However, a minor number of key employees involved in the construction, may decide to re-locate in the short-medium term or rent accommodation. During the operational phase of the substation, it is envisaged that any operators and maintenance personnel will be sourced locally. There will be no mass in-migration associated with the development. Throughout construction and operation, it is expected that the development will have a neutral impact on population.

Land and property value may be economic or amenity in nature. Economic land value is outside the scope of environmental assessment. The potential for the proposed development to devalue land and residential property is essentially subjective and dependent upon public perception. The nearest residential dwellings are about 200m from the proposed substation, to the east and southeast. There is an existing OHL between the houses and the proposed development, therefore adverse impact on land value is not expected.

3.3.1.2 *Economic Activity and Employment*

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.

The construction phase is expected to take 12 months and will employ approximately 30-35 personnel, which will have a minor positive impact on employment. Additional services required in engineering, consultancy, site investigation, surveying, and environmental assessment and monitoring will provide further short-term employment opportunities.

3.3.1.3 *Social and Land-Use Considerations*

It is not anticipated that there will be any significant impacts on land-use in the surrounding area, outside the confines of the proposed development Site. The impacts will result in a change of land-use from agriculture to energy infrastructure within the footprint of the proposed development, while land-uses in the immediate area will be unaffected in the long-term. The land-take for the proposed

development has been kept to a minimum to allow only for installation of substation infrastructure, thereby minimising changes in land-use in so far as possible.

During construction there will be no severance, loss of rights of way or amenities (including electricity), that could alter use of the surroundings. There is likely to be some temporary disruption along the local public roadways.

3.3.1.4 *Health and Safety*

Development works not only can pose safety risks but can give rise to potential impacts on general amenity affecting health and wellbeing. General amenity is to do with the pleasant, amenable qualities of a place as it is used and perceived by the people who reside, frequent or view it. There are a number of general elements that contribute to or detract from the amenity of an area. Nuisances associated with construction activities such as noise, dust, and traffic are potential factors for devaluation of amenity. These are discussed in the following paragraphs.

3.3.1.4.1 *Public Safety*

While there is the potential for construction-related hazards, serious risks to human health and safety are not envisaged. During construction, the site will be managed in accordance with the following safety and health regulations and guidelines which will ensure a high standard of safety both for workers on site and the general public.

- Safety, Health & Welfare at Work (Construction) Regulations 2006;
- Safety, Health & Welfare at Work Act 2005;
- Safety, Health & Welfare at Work (General Applications) Regulations 1993 to 2003; and

A Safety and Health Plan covering all aspects of the construction process will be prepared in advance of construction and will comprehensively deal with safety and health related issues.

3.3.1.4.2 *Traffic and Road Usage*

Potential impacts on the surrounding road network will arise principally during the construction phase, with peak traffic occurring during the first 2 months of an overall 12 month programme during the stone importation. Impacts will therefore be limited and temporary in nature. 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. This would occur for circa two months during the importation of stone. Highest peak hour heavy vehicle traffic volumes would be up to eight heavy vehicles, both to and from the site.

A traffic impact assessment carried out for the proposed development indicates that while the increased traffic volume on the local road network during the construction phase would be substantial, this increase will be well within the carrying capacity of the local road network and will be of short duration. However, the existence of additional traffic, especially heavy goods vehicle traffic, associated with the construction phase has the potential for local residents and users of these roadways to experience minor disturbances and/or be inconvenienced on encountering site related traffic. The traffic impact assessment included in **Chapter 11** of this EIAR sets out that construction traffic will occur outside the peak morning and evening peak commuter traffic and that any construction phase impacts would be temporary, requiring no road closures.

3.3.1.4.3 Noise

The construction phase has the potential to generate noise emissions which could cause disturbance to local noise sensitive receptors. The construction noise impact assessment included in **Chapter 8** of this EIAR found that noise generated during the construction phase of this development will not exceed the acceptable construction noise limit (70dBA) at any dwelling location, for the duration of the construction phase.

The noise assessment makes recommendations regarding measures of reducing the amount of noise reaching the noise sensitive receptors in accordance with the following:

- *BS 5228-1&2:2009+A1:2014*, Code of Practice for Noise and Vibration Control on construction and open sites.
- *Guidelines for Environmental Noise Impact Assessment*, Institute of Environmental Management and Assessment (IEMA), 2014.
- *Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)*, Environmental Protection Agency (EPA), 2016.

Best practice should be employed at all times to minimise noise emissions from the construction site. These are detailed in the Construction Environmental Management Plan (CEMP) prepared for the project.

3.3.1.4.4 Dust

There is the potential for short-term negative impacts in terms of dust emissions during the construction phase of the development.

Vehicle and fugitive dust emissions would occur primarily during project construction. Dust generated during the construction phase is not likely to significantly affect the local air quality. Given the distances to the nearest sensitive receptors, the local residences, dust levels are not expected to exceed the recommended TA Luft 350mg/m³/day guideline limit. There is, however, the possibility of nuisance dust occurring in the vicinity of the site entrance and along the local public roads which could affect road users. This is considered a temporary minor negative impact and mitigation will be implemented.

With the effective implementation of standard dust management measures to control and reduce dust no significant adverse impact, in terms of a community nuisance at nearby houses and other buildings near the site, is likely to occur. These are detailed in the Construction Environmental Management Plan (CEMP) prepared for the project.

3.3.2 Operational Phase

3.3.2.1 *Economic Activity*

There is no known direct or indirect development likely to result from the proposed project.

3.3.2.2 *Social and Land-Use Considerations*

New development proposals have the potential to impact the local human environment by introducing a new incompatible land use activity, conflicting land use policy for the area, or resulting in significant land-use impact. It is considered that the proposed development would not constitute significant negative impacts in terms of social and land-use considerations for the following reasons:

- There will there be no severance, loss of rights of way or amenities as a result of the proposed substation. All works will be undertaken on private lands.
- Peat extraction and agricultural activities will be able to continue on the lands local to the substation infrastructure.
- In terms of impacts to neighbouring lands and land-uses, it is considered that the proposed development does not pose a significant risk to either existing or future land-uses. All existing land-use practices can co-exist with the proposed development. Furthermore the project is located opposite the Edenderry Power station and will provide additional capacity.
- It is considered that the development will not have any significant negative impact on tourism.
- The project is unlikely to have an effect on population numbers of the area. There will be no loss of residential dwellings and therefore there will be no displacement of the existing population. There is unlikely to be any in-migration associated with the development. Therefore the proposed development is considered to have a negligible impact on population.
- Land and property value may be economic or amenity in nature. The potential for the proposed development to devalue land and residential property in its vicinity is essentially dependent upon public perception of the development and perceived associated impacts. Personal disposition regarding visual intrusion is the only likely implication with regard to land value. The development will not cause any material damage and does not pose any polluting or hazardous threat that would result in the devaluation of neighbouring properties. The development is thus deemed to have a neutral impact on land and property value.

3.3.2.3 *Health and Safety*

Potential electrical risks are associated with substation infrastructure. With adequate fencing and security, it is not envisaged that these will however pose any significant risk as these will fully meet health and safety regulations relating to high voltages.

3.3.2.3.1 *Visual Impacts*

A landscape and visual impact assessment was carried out in relation to the proposed development A total of 6 viewpoints were used determine the visual impact of the proposed substation and associated grid connection. From these viewpoints, photomontages were prepared and a written assessment completed.

The proposed position of the substation will be in a relatively flat area. It will be visible from some views very close to the proposed development. Overall, the proposed development will have a slight visual and landscape impact.

The visual impact assessment also assessed the cumulative impact of the proposed development along with other planned or operating developments in the area. It is not considered that the proposed development will make more than a very minor contribution to the cumulative impact of development in this area and not one that will generate significant cumulative effects.

Refer to **Chapter 9 Landscape and Visual** for further details.

3.4 MITIGATION MEASURES

The potential for significant impacts on the human environment, which will principally arise during the construction phase from traffic, noise and dust and during the operational phase from noise will need to be addressed. Specific mitigation measures are outlined in the respective Chapters of this EIAR. A Construction Environmental Management Plan (CEMP) has been prepared for the project and will be implemented for the construction phase to minimise impact on the human environment. No additional mitigation measures for population and human health impacts are proposed in this Chapter.

3.5 RESIDUAL IMPACTS

With the recommended mitigation in place, significant negative residual impacts on the human environment are not envisaged in relation to traffic or noise.

- With the installation of applying the latest technology, with the potential for mitigation if necessary, noise nuisance will be kept to a minimum and within acceptable noise limits.
- With the implementation of standard traffic management measures, traffic nuisance will be kept to a minimum.
- With the implementation of Safety and Health Plan during construction including appropriate mitigation measures, risks to human health and safety are not envisaged.
- With the implementation of standard best management construction activities, dust levels will remain within recommended acceptable guideline limits.

3.6 CONCLUSION

As with any development, construction activities can cause a nuisance to the local community and are likely to pose temporary minor disturbances socially. The most notable of these disturbances relates to the generation of additional traffic on the local networks, generation of noise and safety implications. However, disturbances associated with the additional volumes of traffic will principally be confined to the construction phase and will cease on completion of works. The construction phase will be managed to minimise the impact on the human environment and the local residents. 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 project will aid in enabling local renewable energy projects to connect to the National Electricity Grid.

Noise emissions are not considered to be significant. The noise assessment shows that the proposed substation would be able to operate within the recommended noise limit criteria for all third-party properties and thus will not adversely impact on the quality of life of local residents and the existing relatively tranquil environment in which they live. The development will be operated and managed with the aim of minimal impact on the human environment and the local residents.

The substation infrastructure will be visible from some views very close to the site. The proposed substation building and associated pylons have elevations of 9m and 12m respectively and will be partially screened by boundary hedgerow vegetation between it and the power plant. The landscape and visual effect from the proposed development on the local will be slight.