

5. POPULATION AND HUMAN HEALTH

5.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) identifies, describes, and assesses the potential effects of the Proposed Development on population and human health and has been completed in accordance with the EIA guidance and legislation set out in Chapter 1: Introduction. The full description of the Proposed Development is provided in Chapter 4 of this EIAR.

One of the principal concerns in the development process is that human beings, as individuals or communities, should experience no significant diminution in their quality of life from the direct, indirect, or cumulative effects arising from the construction, operation and decommissioning of a development. Ultimately, all the impacts of a development impinge on human beings, directly and indirectly, positively, and negatively. The key issues examined in this chapter of the EIAR include population, human health, employment and economic activity, land-use, residential amenity, community facilities and services, tourism, property values, noise, and health and safety.

There are 3 no. occupied dwellings within 500m of the Proposed Development. The closest dwelling is located approximately 157 metres to the north of the proposed road upgrade works at its nearest point.

5.1.1 Statement of Authority

This section of the EIAR has been prepared by Eoin O’Sullivan, with the assistance of Niamh McHugh, both of MKO. Niamh is a Graduate Environmental Scientist who joined the company in 2021 and has since been involved in the preparation of a number of EIARs for wind farms and Grid Connection applications. Niamh holds a BSc. in Environmental Science from the National University of Ireland, Galway. Eoin is an experienced geo-environmental scientist and has over ten years’ experience in the design, implementation, and interpretation of all phases of geo-environmental and geotechnical site investigations. Eoin also has extensive experience in the preparation of population and human health assessments and reports for EIAs. Eoin is proficient in undertaking detailed quantitative risk assessments for the protection of controlled waters and human health. Eoin holds an MSc in Environmental Engineering and is a Chartered Member of the Chartered Institute of Water and Environmental Management (CWEM) and Chartered Environmentalist (CEnv) with the Society of Environment. This section of the EIAR has also been reviewed by Michael Watson, also of MKO. Michael is a project director and head of the Environmental Team in MKO. Michael has over 20 years’ experience in the environmental sector and has been working with MKO since 2014. Michael’s professional experience includes managing Environmental Impact Assessments, EPA licence applications, environmental due diligence and general environmental assessment on behalf of clients in the wind farm, waste management public sector, and commercial and industrial sectors nationally.

5.2 Population

5.2.1 Receiving Environment

This socio-economic study of the receiving environment included an examination of the population and employment characteristics of the area. Information regarding population and general socio-economic data were sourced from the Central Statistics Office (CSO), the Cork County Development Plan 2014 – 2021, the Draft Cork County Development Plan 2022-2028, the Kerry County Development Plan 2015 – 2021, the Draft Kerry County Development Plan 2022-2028, Fáilte Ireland and any other literature pertinent to the area. The study included an examination of the population and employment characteristics of the area. This information was sourced from the Census of Ireland 2016, which is the most recent census for which a complete dataset is available, also the Census of Ireland 2011, the

Census of Agriculture 2010 and from the CSO website (www.cso.ie). Census information is divided into State, Provincial, County, Major Town, and District Electoral Division (DED) level.

The Proposed Development is located approximately 3km northwest of the town of Ballyvourney, Co. Cork and approximately 6 kilometres southwest of the town of Millstreet, Co. Cork. The site is accessed via local roads and commercial forestry roads from the N22 National Primary Route which runs in a general southeast to northwest direction southwest of the site of the Proposed Development. The site is also accessible via local roads and existing wind farm access roads from the R582 Regional Route which runs from north to south to the east of the site. The site of the Proposed Development is shown in Figure 5-1.

In order to assess the population in the vicinity of the Proposed Development, the Study Area for the Population section of this EIAR was defined in terms of the District Electoral Divisions (DEDs) where the Proposed Development is located, and where relevant, nearby DEDs which may be affected by the Proposed Development. The Proposed Development lies within four DEDs: Clydagh (Co. Kerry), An Sliabh Riabhach, Na hUláin, Coomlogane, and Clondrohid (all Co. Cork). All five of these DEDs will be collectively referred to as the Study Area for this Chapter.

The Study Area has a population of 3,348 persons, as of 2016 and comprises a total land area of 233.9km² (Source: CSO Census of the Population 2016). Land-use on the site and in the wider area comprises a mix of commercial forestry, wind farm development, cutover peat bog and some agricultural pastures.

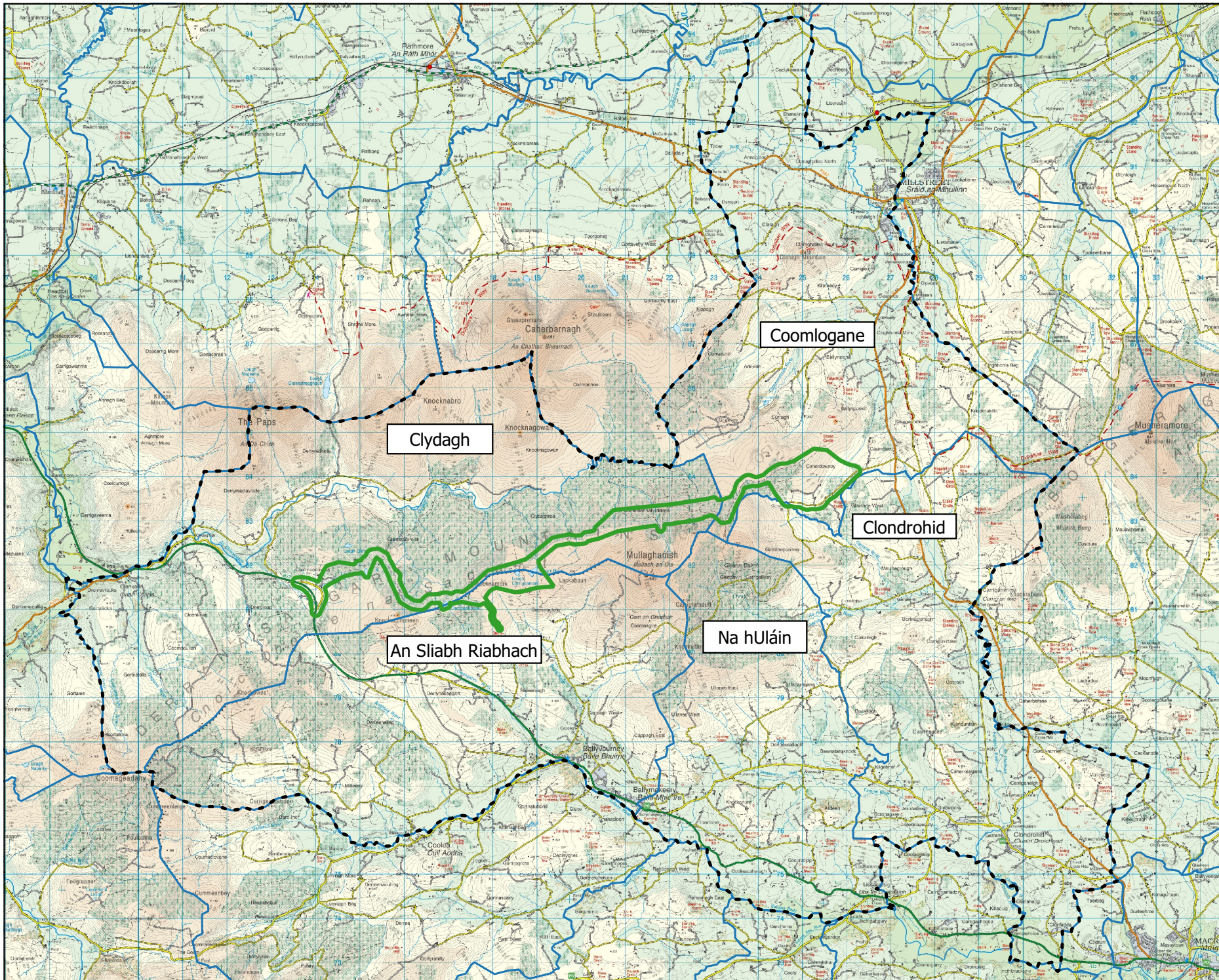
5.2.2 Population Trends

In the period between the 2011 and the 2016 Census, the population of Ireland increased by 3.8%. During this time, the population of County Cork grew by 4.6% to 542,868 persons, and the population of County Kerry grew by 1.5% to 147,707 persons. Other population statistics for the State, County Cork, County Kerry, and the Study Area have been obtained from the Central Statistics Office (CSO) and are represented in Table 5-1.

Table 5-1 Population 2011 – 2016 (Source: CSO)

Area	Population Change		% Population Change
	2011	2016	2011 - 2016
State	4,588,252	4,761,865	3.8%
County Cork	519,032	542,868	4.6%
County Kerry	145,502	147,707	1.5%
Study Area	3,379	3,348	-0.92%

The data presented in Table 5-1 shows that the population of the Study Area decreased by 0.92% between 2011 and 2016. In contrast, both Co. Cork and Co. Kerry experienced an increase in population in this period, as can also be seen in Table 5-1. When the population data is examined in closer detail, it shows that the rate of population increase, and decline varies slightly between the Study Area DEDs. The population of Clydagh decreased by 5%, the population of Clondrohid decreased by 1.1%, while the population of Na hUláin decreased by 6%. The population of An Sliabh Riabhach increased by 2% in the same period, and the population of Coomlogane increased by 0.22%.



Map Legend

- EIAR Study Boundary
- - - Population Study Area
- Electoral Division Boundary



Drawing Title
Population Study Area

Project Title
Proposed Substation, Unsewered Cabling & Access Roads to Knocknamore Renewable Energy Development

Drawn By NMCh	Checked By EOS
Project No. 210732	Drawing No. 5-1
Scale 1:112000	Date 07.07.2022



MKO
Planning and Environmental Consultants
Tuam Road, Galway
Ireland, H91 VW84
+353 (0) 91 735611
email: info@mkofireland.ie
Webste: www.mkofireland.ie

Microsoft product screen shots reprinted with permission from Microsoft Corporation
Ordnance Survey Ireland Licence No. C.YAL50267517 Ordnance Survey Ireland/Government of Ireland

Of the DEDs that make up the Study Area, the highest population was recorded in Coomlogane DED at 905 persons, and the smallest population was recorded in Clydagh, at just 122 persons. The population recorded for Na hUláin was 597 persons, while the population was recorded as being 851 persons in An Sliabh Riabhach, and 873 persons for Clondrohid.

5.2.3 Population Density

The population densities recorded within the State, County Cork, County Kerry and the Study Area during the 2011 and 2016 Census are shown in Table 5-2.

Table 5-2 Population Density in 2011 and 2016 (Source: CSO)

Area	Population Density (Persons per square kilometre)	
	2011	2016
State	67.49	70.05
County Cork	69.8	73.0
County Kerry	30.8	31.2
Study Area	14.45	14.32

The population density of the Study Area recorded during the 2016 Census was 14.32 persons per km². This figure is significantly lower than the national population density of 70.05 persons per km² and the county population density of 73.0 persons per km² for County Cork and 31.2 persons per km² for County Kerry. These findings indicate that the study area has a low population density.

Similar to the trends observed in the population, the population density recorded across the Study Area site varies between DEDs. Clydagh DED has the lowest population density at 2.12 persons per km², while Na hUláin DED recorded the highest population density at 18.99 persons per km². Clondrohid DED recorded a population density of 18.95 persons, An Sliabh Riabhach DED recorded a population density of 17.98 persons, and Coomlogane DED recorded a population density of 18.63 persons per km².

5.2.4 Household Statistics

The number of households and average household size recorded within the State, County Cork, County Kerry and the Study Area during the 2011 and 2016 Censuses are shown in Table 5-3.

Table 5-3 Number of Household and Average Household Size 2011 – 2016 (Source: CSO)

Area	2011		2016	
	No. of Households	Avg. Size (persons)	No. of Households	Avg. Size (persons)
State	1,654,208	2.73	1,702,289	2.75
County Cork	188,019	2.8	195,853	2.8
County Kerry	53,306	2.7	54,493	2.7

Area	2011		2016	
	No. of Households	Avg. Size (persons)	No. of Households	Avg. Size (persons)
Study Area	1,252	2.72	1,264	2.66

In general, the figures in Table 5-3 show that the number of houses within the State and both counties Cork and Kerry increased from 2011 to 2016. The number of households in the Study Area also increased slightly, however, the average size of the household has decreased slightly between 2011 and 2016 within the Study Area. Average household size in the Study Area during 2016 Census is below that of the County and State level. Similar to trends observed above, the average household size recorded across the Study Area varied between DEDs. Na hUláin DED had the highest, with 2.87 persons per household recorded in 2016, while Clydagh DED, Clondrohid DED and Sliabh Riabhach DED recorded lower household sizes of 2.45 persons, 2.85 persons, and 2.65 persons per household on average. Coomlogane DED recorded the lowest average household size in 2016 at 2.41 persons per household.

5.2.5 Age Structure

Table 5-4 presents the population percentages of the State, County Cork, County Kerry, and Study Area within different age groups as defined by the Central Statistics Office during the 2016 Census. This data is also displayed in Figure 5-2.

Table 5-4 Population per Age Category in 2016 (Source: CSO)

Area	Age Category				
	0 - 14	15 - 24	25 - 44	45 - 64	65 +
State	21.1%	12.1%	29.5%	23.8%	13.4%
County Cork	20.9%	12.4%	29.0%	24.0%	13.6%
County Kerry	19.5%	10.7%	26.1%	26.8%	16.9%
Study Area	19.8%	10.0%	25.5%	26.3%	18.3%

The proportion of the Study Area population is broadly similar to those recorded at national and county level for most categories. For the Study Area, the highest population percentage occurs within the 45-64 age category.

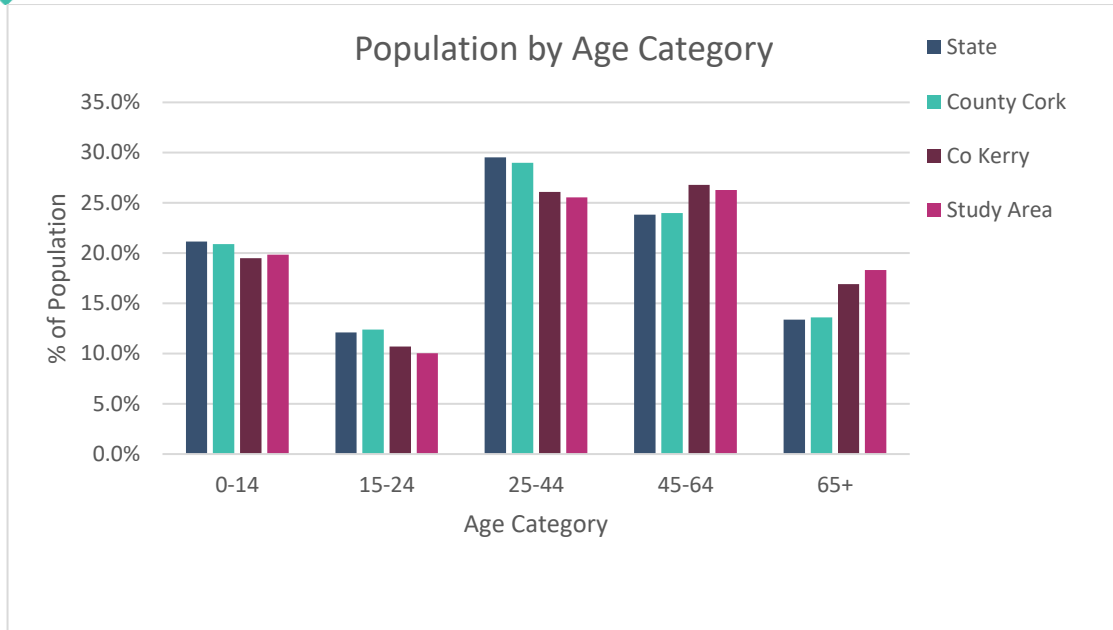


Figure 5-2 Population per Age Category in 2016 (Source: CSO)

5.2.6 Employment and Economic Activity

5.2.6.1 Economic Status of the Study Area

The labour force consists of those who are able to work, i.e., those who are aged 15+, out of full-time education and not performing duties that prevent them from working. In 2016, there were 2,304,037 persons in the labour force in the State. Table 5-5 shows the percentage of the total population aged 15+ who were in the labour force during the 2016 Census. This figure is further broken down into the percentages that were at work or unemployed. It also shows the percentage of the total population aged 15+ who were not in the labour force, i.e., those who were students, retired, unable to work or performing home duties.

Table 5-5 Economic Status of the Total Population Aged 15+ in 2016 (Source: CSO)

Status		State	County Cork	County Kerry	Study Area
% of population aged 15+ who are in the labour force		61.4%	61.6%	58.8%	61.3%
% of which are:	At work	87.1%	90.8%	87.6%	92.4%
	First time job seeker	1.4%	0.9%	1.2%	0.4%
	Unemployed	11.5%	8.3%	11.2%	7.2%
% of population aged 15+ who are not in the labour force		38.6%	38.4%	41.2%	38.7%
% of which are:	Student	29.4%	29.1%	24.2%	22.9%
	Home duties	21.1%	22.7%	19.6%	24.3%

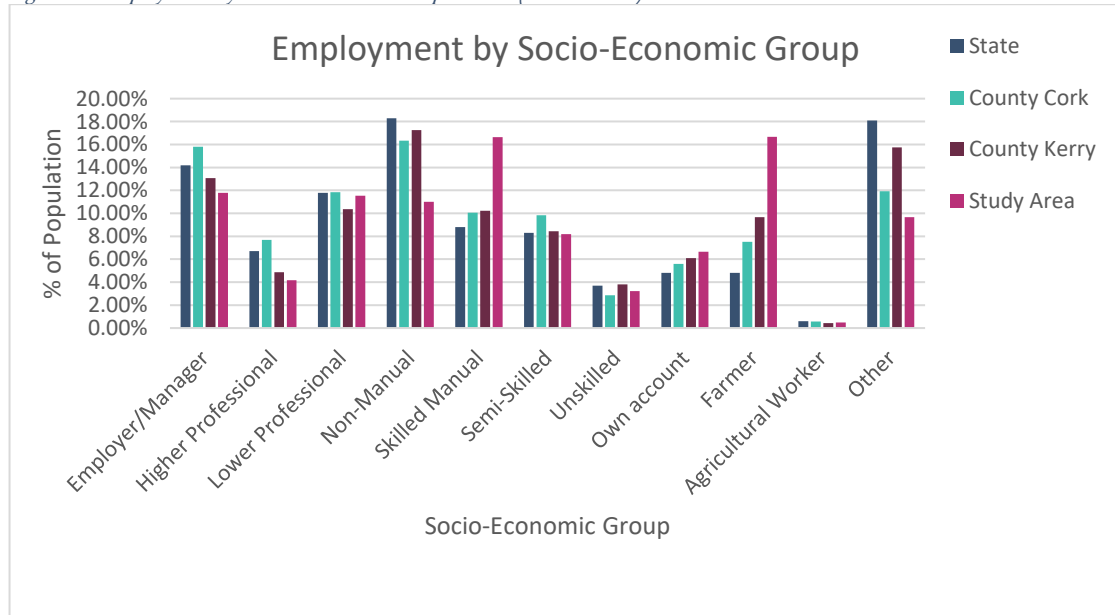
Status	State	County Cork	County Kerry	Study Area
Retired	37.6%	36.9%	44.6%	43.4%
Unable to work	10.9%	10.5%	10.7%	8.9%
Other	1.0%	0.8%	1.0%	0.6%

Overall, the principal economic status of those living in the Study Area is broadly similar to that recorded at State and County level. During the 2016 Census, the percentage of first-time job seekers was similar at a county and state level, but noticeably lower in the Study Area Population. Of those who were not in the labour force during the 2016 Census, the highest percentage of the Study Area population were ‘Retired’ individuals, similar to state and county populations.

5.2.6.2 Employment by Socio-Economic Group

Socio-economic grouping divides the population into categories depending on the level of skill or educational attainment required. The ‘Higher Professional’ category includes scientists, engineers, solicitors, town planners and psychologists. The ‘Lower Professional’ category includes teachers, lab technicians, nurses, journalists, actors and driving instructors. Skilled occupations are divided into manual skilled such as bricklayers and building contractors; semi-skilled such as roofers and gardeners; and unskilled, which includes construction labourers, refuse collectors and window cleaners. Figure 5-3 shows the percentages of those employed in each socio-economic group in the State, County Cork, County Kerry, and the Study Area during 2016.

Figure 5-3 Employment by Socio-Economic Group in 2016 (Source: CSO).



The highest level of employment recorded within the Study Area was recorded in the Farmer category, closely followed by the Skilled Manual category. The levels of employment within the Employer/Manager, Higher Professional, Non-Manual, Semi-Skilled, Agricultural Worker and Other categories were lower in the Study Area than the figures recorded at a State level. In contrast, the figures recorded for Lower Professional, Skilled Manual, Unskilled, Own Account and Farmer categories recorded in the Study Area were higher than those recorded at a State Level.

The CSO employment figures grouped by socio-economic status includes the entire population for the Study Area, County and State in their respective categories. As such, the socio-economic category of 'Other' is skewed to include those who are not in the labour force.

5.2.6.3 Employment and Investment Potential in the Irish Wind Energy Industry

5.2.6.3.1 Background

A report entitled '*Jobs and Investment in Irish Wind Energy – Powering Ireland's Economy*' was published in 2009 by Deloitte, in conjunction with the Irish Wind Energy Association (IWEA). This report focused on the ability of the Irish wind energy industry to create investment and jobs. In terms of the overall economic benefit to be obtained from wind energy, the report states in its introduction:

"Ireland is fortunate to enjoy one of the best wind resources in the world. Developing this resource will reduce and stabilise energy prices in Ireland and boost our long-term competitiveness as an economy. It will also significantly reduce our dependence on imported fossil fuels."

More recently, a report published in 2014 by Siemens entitled '*An Enterprising Wind - An economic analysis of the job creation potential of the wind sector in Ireland*', also in conjunction with the Irish Wind Energy Association (IWEA), concluded that, '*a major programme of investment in wind could have a sizeable positive effect on the labour market, resulting in substantial growth in employment.*' The results of the research indicate that the majority of jobs created as a result of wind energy development in Ireland are likely to be in the industry category, followed by grid jobs and finally potential manufacturing jobs. The creation of jobs would be as a result of a major programme of investment in wind energy.

5.2.6.3.2 Energy Targets

The Climate Action Plan 2019 (CAP) was published on the 1st of August 2019 by the Department of Communications, Climate Action and Environment. The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Ireland's environment, society, economic and natural resources. The CAP includes a commitment that 70% of Ireland's electricity needs will come from renewable sources by 2030. It is envisaged that wind energy will provide the largest source of renewable energy in achieving this target.

In March 2021, the Government of Ireland approved the Climate Bill which aims for net-zero emissions by 2050 and an Interim Target of 51% reduction to be reached by 2030, relative to a baseline of 2018. The Government is required to adopt a series of economy-wide five-year carbon budgets, with the first two five-year carbon budgets correlating to the Interim Target. The Bill also provides the framework for Ireland to meet its international and EU climate commitments and to become a leader in addressing climate change. The Bill states that Local Authorities must prepare individual Climate Action Plans which will include both mitigation and adaptation measures and must be updated every five years. Local Authority Development Plans must align with their Climate Action Plan.

In order to achieve these targets, Ireland's dependency on fossil fuels needs to drop from 80% dependency today to 5% dependency in 2050. MaREI forecast that 25GW of renewable electricity capacity is needed by 2050, compared with 4.5GW that is currently available today¹.

5.2.6.3.3 Employment Potential

¹ Wind Energy Ireland, MaREI March 2021 *Our Climate Neutral Future Zero by 50*. Available at: <https://windenergyireland.com/images/files/our-climate-neutral-future-0by50-final-report.pdf>

The 2014 report *“An Enterprising Wind: An economic analysis of the job creation potential of the wind sector in Ireland”* published by the Irish Wind Energy Association (IWEA) predicted that the wind energy sector in Ireland would result in 6,659 direct jobs in a scenario where 4GW capacity is achieved by 2020. This figure of 6,659 is broken down further; 5,596 of these jobs are associated directly with the construction and installation of windfarms, while the remaining 1,063 jobs are associated with the national grid. Under this scenario this contributes 1.66 direct jobs per Megawatt (MW) of wind capacity throughout the various stages of installation. According to Wind Energy Ireland, the installed wind capacity in Ireland is over 4.2GW as of February 2021, which would support employment during the last decade. Ireland needs to achieve a total of 8.2GW of onshore wind by 2030 which will further support further employment.

The Sustainable Energy Authority of Ireland² estimates, in their *‘Wind Energy Roadmap 2011-2050’*, note that *‘Onshore and offshore wind could create 20,000 direct installation and O&M jobs by 2040’*. Furthermore, *‘wind energy resource represents a significant value to Ireland by 2050. This value is presented in terms of its ability to contribute to our indigenous energy needs, the benefits of enhanced employment creation and investment potential, and the ability to significantly abate carbon emissions to 2050’*

The 2014 report *‘The Value of Wind Energy to Ireland’*, published by Póry, stated that growth of the wind sector in Ireland could support 23,850 jobs (construction and operational phases) by 2030. If Ireland instead chooses to not develop any more wind, then by 2030 the country will be reliant on natural gas for most of our electricity generation, at a cost of €671 million per annum in fuel import costs.

Internationally, a report issued by WindEurope in September 2017, titled *‘Wind energy in Europe: Scenarios for 2030’* details various scenarios in Europe in respect to the EU target for renewable energy. According to WindEurope’s High Scenario, which assumes favourable market and policy conditions including the achievement of a 35% EU renewable energy target (slightly higher than the 32% EU target for renewables), *‘397 GW of wind energy capacity would be installed in the EU by 2030, 298.5 GW onshore and 99 GW offshore. In this scenario, the wind energy industry would invest €351bn by 2030, and it would create 716,000 jobs’*.

A more recent report which was issued by WindEurope in February 2022, titled *‘Wind Energy in Europe: 2021 Statistics and the Outlook for 2022-2026’* details various scenarios in Europe in respect to the EU target for renewable energy. According to WindEurope’s report, *‘Europe installed 17GW (11 GW in the EU-27) of new wind capacity in 2021. This is not even half of what the EU should be building to be on track to deliver its 2030 Climate Energy Goals. The report continued on to state that ‘We expect Europe to install 116 GW of new wind farms over the period from 2022-2026. Three quarters of these new capacity additions will be onshore wind.’ The report also states that ‘The European Commission modelling shows that we need at least 79 GW offshore wind but National Government have pledged to build at least 92 GW offshore wind capacity by 2030.’*

As of June 2022, there were 5,585 Megawatts (MW) of wind energy capacity installed on the island of Ireland³. Of this, 4,332.5 MW was installed in the Republic of Ireland, with 1,276MW installed in Northern Ireland. The majority of the Republic of Ireland’s installed wind energy capacity is located in Counties Donegal, Galway, Cork and Kerry, contributing to employment potential on the Island of Ireland.

² SEAI (2019), https://www.seai.ie/publications/Wind_Energy_Roadmap_2011-2050.pdf

³ Wind Energy Ireland (formerly IWEA) – Facts and Stats, <https://windenergyireland.com/about-wind/facts-stats>

5.2.6.3.4 Economic Value

A 2009 Deloitte report in conjunction with the Irish Wind Energy Association (now Wind Energy Ireland, WEI) titled 'Jobs and Investment in Irish Wind Energy – Powering Ireland's Economy'⁴ states that the construction and development of wind energy projects across the island of Ireland would involve approximately €14.75 billion of investment from 2009 up to 2020, €5.1 billion of which would be retained in the Irish economy (€4.3 billion invested in the Republic of Ireland and €0.8 billion in Northern Ireland).

The report also states that increasing the share of our energy from renewable sources will deliver significant benefits for the electricity customer, the local economy and society. It estimates that between 25 and 30% of capital investment is retained in the local economy. This typically flows to companies in construction, legal, finance and other professional services. The report states:

“.. the framework acknowledges the need to put the energy/climate change agenda at the heart of Ireland's economic renewal. Every new wind farm development provides a substantial contribution to the local and national economy through job creation, authority rates, land rents and increased demand for local support services. More wind on the system will also result in lower and more stable energy prices for consumers while helping us achieve our energy and emissions targets.”

A 2019 report by Baringa, 'Wind for a Euro: Cost-benefit analysis of wind energy in Ireland 2000-2020', has analysed the financial impact for end consumers of the deployment of wind generation in Ireland over the period 2000-2020. The report calculates how the costs and benefits for consumers would have differed if no wind farms had been built. The analysis indicated that the deployment of 4.1 GW of wind generation capacity in Ireland between 2000 and 2020 (2018-2020 results being projective) will result in a total net cost to consumers, over 20 years, of €0.1bn (€63 million to be exact), which equates to a cost of less than €1 per person per year since 2000. Further cost benefit analysis noted that wind energy has delivered €2.3 billion in savings in the wholesale electricity market. As such, the economic benefit of renewable energy to consumers is greater than what would have been if Ireland did not invest in wind power. This tallies with the Deloitte report which indicated that more wind energy feeding into the national grid would result in lower and more stable energy costs for consumers.

The Proposed Development which will facilitate the construction of the Permitted Development will contribute to the economic value that renewable energy brings to Ireland by reducing the reliance of fossil fuels in Ireland and assist in meeting our renewable energy targets as set out by the EU.

5.2.7 Land-Use

Land-use on the site and in the wider area comprises a mix of commercial forestry, wind farm development, cutover peat bog and some agricultural pastures.

The total area of farmland within the five DEDs around the Proposed Development measures approximately 14,900 hectares, comprising approximately 63.7% of the Study Area, according to the CSO Census of Agriculture. There are 331 farms located within the five DEDs, with an average farm size of 45 hectares. This is larger than the 38.1 ha average of Co Cork and 34 ha Co Kerry.

Within the Study Area, farming employs 646 people, and the majority of farms are family-owned and run. Table 5-6 shows the breakdown of farmed lands within the Study Area. Pasture accounts for the largest proportion of farmland, which is followed next by Grazing. Silage, Hay crops, and cereals. There are no lands farmed for potatoes within the study area.

⁴ Deloitte, Irish Wind Energy Association 2009 Jobs and Investment in Irish Wind Energy Powering Ireland's Economy. Available at: <https://windenergyireland.com/images/files/9660bd5e72bcac538f47d1b02cc6658c97d41f.pdf>

Table 5-6 Farm Size and Classification within the Study Area in 2010 (Source: CSO)

Characteristic	Value
Size of Study Area	23,388 hectares
Total Area Farmed within Study Area	14,900 hectares
Farmland as % of Study Area	63.7%
Breakdown of Farmed Land	Area (hectares)
Total Pasture	7,269 ha
Grazing	4,181 ha
Total Silage	3,000 ha
Total Hay	441 ha
Total Crops	9 ha
Total Cereals	3 ha
Total Potatoes	0 ha

5.2.8 Services

The site of the Proposed Development which straddles the county boundary between Co. Kerry and Co. Cork is located approximately 6 kilometres southwest of the town of Millstreet and 3 kilometres northwest of the village of Ballyvourney. The main services for the Study Area are located within the village of Ballyvourney. Additionally, the nearest town, Millstreet, where larger scale retail and services are available, lies approximately 11km northeast of the Proposed Development.

5.2.8.1 Education

The nearest school to the Proposed Development is Carriganima National School, which is located approximately 4.9 km southeast of the Proposed Development at its closest point.

Coláiste Ghobnatan is the nearest secondary school to the Proposed Development and is located approximately 6.5 km to the southeast of the Proposed Development at its closest point.

The closest Third Level Institutes to the site are Munster Technological University, University College Cork, and MTU (North Campus, Co. Kerry), all located in excess of 40km northeast and northwest respectively of the Proposed Development.

5.2.8.2 Access and Public Transport

The site is accessed via local roads and commercial forestry roads from the N22 National Primary Route which runs in a general southeast to northwest direction southwest of the site of the Proposed Development. The site is also accessible via local roads and existing wind farm access roads from the R582 Regional Route which runs from north to south to the east of the site. The nearest bus routes from which several daily connections are available, can be accessed in Ballyvourney, approximately 3km southeast of the Proposed Development at its closest point.

5.2.8.3 Amenities and Community Facilities

Most of the amenities and community facilities, including GAA and other sports clubs, youth clubs, recreational areas, retail, and personal services are available in the nearby village of Ballyvourney and Millstreet, with larger scale services being available in the larger town of Macroom.

The varied environment of this area of the County Cork and County Kerry border provides many opportunities for walking, hiking and cycling. There are several mountains and mountain trails in the vicinity of the Proposed Development, including the Derrynasaggart Mountain Range, the Paps Mountain Range and Mullaghanish mountain. Claragh Mountain is located near Millstreet, approximately 6 km from the Proposed Development and consists of a mountain loop specially designed for walking and hiking.

5.3 Tourism

5.3.1 Tourism Numbers and Revenue

Tourism is one of the major contributors to the national economy and is a significant source of full time and seasonal employment. During 2019, total tourism revenue generated in Ireland was approximately €9.5 billion, an increase on the €9.4 billion revenue recorded in 2018. Overseas tourist visits to Ireland in 2019 grew by 0.7% to 9.7 million (*Tourism Facts 2019*, Fáilte Ireland, March 2021).

Ireland is divided into seven tourism regions. Table 5-7 shows the total revenue and breakdown of overseas tourist numbers to each region in Ireland during 2019 (*Tourism Facts 2019*, Fáilte Ireland, March 2021).

Table 5-7 Overseas Tourists Revenue and Numbers 2019 (Source: Fáilte Ireland)

Region	Total Revenue (€m)	Total Number of Overseas Tourists (000s)
Dublin	€2,210m	6,644
Mid-East/Midlands	€ 348m	954
South-East	€261m	945
South-West	€970m	2,335
Mid-West	€472 m	1,432
West	€653m	1,943
Border	€259m	768
Total	€5,174 m	15,021

The Proposed Development is located within the South-West Region. According to *Regional Tourism Performance in 2019* (Fáilte Ireland, March 2021), the South-West Region which comprises the counties of Cork and Kerry, benefitted from approximately 15.5% of the overseas tourists to the country and approximately 19% of the associated tourism income generated in Ireland in 2019.

Although the data for 2019 is not available, Table 5-8 presents the most recent breakdown of overseas tourist numbers and revenue to the South-West region during 2017 (*2017 Topline Tourism Performance by Region*, Fáilte Ireland, August 2018). As can be observed in Table 5-8, County Cork

had the highest number of overseas tourists visiting the Region during 2017 and had a tourism revenue at €631m.

Table 5-8 Overseas Tourism to South-West Region during 2017 (Source: Fáilte Ireland)

Region	Total Revenue (€m)	Total Number of Overseas Tourists (000s)
Cork	631	1,605
Kerry	337	1,277

5.3.2 Tourist Attractions

There are no key identified tourist attractions pertaining specifically to the site of the Proposed Development itself.

Key tourist attractions within Counties Cork and Kerry include the Ring of Kerry, Killarney National Park, Cork City, and Fota Wildlife Park. Within the Cork-Kerry boundary area there are also many additional tourist attractions found around Millstreet, Macroom, and Killarney, which are all within 20 kilometres of the Proposed Development. The Discover Ireland website lists the following attractions within 20km of the Proposed Development:

- Killarney National Park is located approximately 18.5 km west of the Proposed Development and possesses a number of walking and hiking trails with unrivalled views of the McGillycuddy Reeks, acres of woodland and several lakes.
- Ring of Kerry – the start point of this extremely popular tourist trail for walking, cycling, hiking and driving is located in Killarney, approximately 17.5km west of the Proposed Development.
- Torc Waterfall – also located within Killarney National Park, Torc Waterfall is an extremely popular tourist attraction and can be reached within the National Park by following the Muckross House to Torc Waterfall Lake Loop.
- Muckross House – as stated above, the Muckross House is located within Killarney National Park and can be reached by following the Muckross House to Torc Waterfall Lake Loop.
- Drishane Castle – the castle and landscaped grounds are located outside Millstreet in Co. Cork, approximately 13.5 km from the Proposed Development. The Castle is a National Monument and encompasses a tower house, an 18th Century house, and associated gardens.

5.4 Health Impacts of Proposed Development

5.4.1 Electromagnetic Interference

The provision of electric cables associated with the Proposed Development is common practice throughout the country and installation to the required specification does not give rise to any specific health concerns.

The extremely low frequency (ELF) electric and magnetic fields (EMF) associated with the operation of the proposed cables fully comply with the international guidelines for ELF-EMF set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), a formal advisory agency to the World Health Organisation, as well as the EU guidelines for human exposure to EMF. Accordingly, there will be no operational impact on properties (residential or other uses) as the ICNIRP guidelines will not be

exceeded at any distances even directly above the cables. The ESB document 'EMF & You' (ESB, 2017)⁵ provides further practical information on EMF.

Further details on the potential impacts of electromagnetic interference to telecommunications and aviation are presented in Chapter 13: Material Assets.

5.4.2 Assessment of Effects on Human Health

As set out in the Department of Housing, Planning, Community and Local Government 'Key Issues Consultation Paper on the Transposition of the EIA Directive 2017' and the guidance listed in Section 1.2.2 of Chapter 1: Introduction, the consideration of the effects on populations and on human health should focus on health issues and environmental hazards arising from the other environmental factors, for example water contamination, air pollution, noise, accidents, disasters.

Chapter 7: Land, Soils and Geology, Chapter 8: Hydrology and Hydrogeology, Chapter 9: Air and Climate, Chapter 10: Noise and Vibration and Chapter 13: Material Assets (Traffic and Transport) provide an assessment of the effects of the Proposed Development on these areas of consideration. There is the potential for negative effects on human health during the construction phase related to potential emissions to air of dust, potential emissions to land and water of hydrocarbons, release of potentially silt-laden runoff into watercourses and noise emissions. The assessments however show that the residual impacts are not significant and do not have the potential to cause negative health effects for human beings. On this basis, the potential for negative health effects associated with the Proposed Development is imperceptible.

The proposed site design and mitigation measures outlined in Chapter 7 and Chapter 8 ensures that the potential for impacts on the water environment are not significant. No impacts on local water supplies are anticipated.

As set out in Chapter 8, potential health effects are associated with negative impacts on public and private water supplies and potential flooding. There are no mapped public or group groundwater scheme protection zones in the area of the Proposed Development. There are also no private wells located down-gradient of the Proposed Development site.

The preliminary Flood Risk Assessment has also shown that the risk of the Proposed Development contributing to downstream flooding is also very low.

The Proposed Development is not a recognised source of pollution. It is not an activity which requires Environmental Protection Agency licensing under the Environmental Protection Agency Act 1992, as amended. As such, the Proposed Development is not considered to have ongoing significant emissions to environmental media and the subsequent potential for human health effects.

Once operational, the Proposed Development, in facilitating the Permitted Development, will contribute to the offsetting of carbon emissions associated with the burning of fossil fuels. During the operational stage the Permitted Development will have a long term, significant, positive effect on air quality as set out in Chapter 9 which will contribute to positive effects on human health.

⁵ *EMF & You: Information about Electric & Magnetic Fields and the electricity network in Ireland Available at: https://esb.ie/docs/default-source/default-document-library/emf-public-information_booklet_v9.pdf?sfvrsn=0*

5.4.3

Vulnerability of the Project to Natural Disasters and Major Accidents

As outlined in Section 5.4.2 above, the Proposed Development is not a recognised source of pollution. Should a major accident or natural disaster occur, the potential sources of pollution onsite during the construction, operational and decommissioning phases, are limited. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects on health, such as bulk storage of hydrocarbons or chemicals, storage of wastes etc., are limited.

There is limited potential for significant natural disasters to occur at the Proposed Development site. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited to peat instability, flooding and fire. The risk of peat instability is addressed in Chapter 7: Soils and Geology and the Geotechnical Peat Stability Assessment Report included in Appendix 7-1. The findings of the geotechnical assessment showed that the Proposed Development has an acceptable margin of safety, is considered to be at low risk of peat failure and is suitable for the development. Overall, the peat characteristics on the Proposed Development site are similar to that encountered on many developed wind farm sites. Flooding is addressed in Chapter 8: Hydrology and Hydrogeology. It is considered that the risk of significant fire occurring, affecting the Proposed Development, and causing the Proposed Development to have significant environmental effects is limited and therefore a significant effect on human health is similarly limited. As described earlier, there are no significant sources of pollution in the Proposed Development with the potential to cause environmental or health effects.

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. The Proposed Development site is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e., SEVESO sites and so there are no potential effects from this source.

5.5

Property and Land Values

Property values are not likely to be affected by the Proposed Development, as it is located in an area screened by topography and vegetation. In addition, the proposed underground electrical cabling route will be underground across its entire length. The proposed 110kV substation is located 2.2 km from the closest dwelling house and is screened from dwellings by topography and vegetation.

5.6

Residential Amenity

Residential amenity relates to the human experience of one's home, derived from the general environment and atmosphere associated with the residence. The quality of residential amenity is influenced by a combination of factors, including site setting and local character, land-use activities in the area and the relative degree of peace and tranquillity experienced in the residence.

As previously noted, the Proposed Development is currently used for commercial forestry, wind farm development, localised peat extraction and agriculture, therefore a certain level of industrial activity and traffic movements are associated with the site, which will assist in the assimilation of the Proposed Development into the receiving environment. The closest dwelling is located approximately 157m from the proposed road upgrade works at its closest point.

There are two main impacts upon residential amenity when considering the Proposed Development, one is noise while the other is visual amenity. Noise is a quantifiable aspect of residential amenity while visual amenity is more subjective. A detailed noise assessment has been completed as part of this EIAR

and is discussed in more detail in Chapter 10. A comprehensive landscape and visual impact assessment has also been carried out, as presented in Chapter 12 of this EIAR. Impacts on human beings during the construction, operational and decommissioning phases of the Proposed Development is assessed in relation to each of these key issues and other environmental factors such as noise, traffic, and dust; see Impacts in Section 5.7 below. The impact on residential amenity is then derived from an overall judgement of the combination of impacts due to changes to land-use and visual amenity, noise, traffic, dust, and general disturbance.

5.7 Likely Significant Impacts and Associated Mitigation Measures

5.7.1 'Do-Nothing' Scenario

If the Proposed Development were not to proceed it would not be possible to access and construct the Permitted Development. The opportunity to generate renewable energy and electrical supply to the national grid would be lost. Commercial forestry operations and existing land-use practices would continue at the site.

5.7.2 Construction Phase

During the construction phase, all potential impacts are assessed in regard to the Proposed Development. The construction impacts may affect all aspects of the Proposed Development in some manner and occur simultaneously within the expected construction programme.

5.7.2.1 Health and Safety

Pre-Mitigation Impacts

Construction of the Proposed Development will necessitate the presence of a construction site. Construction sites and the machinery used on them pose a potential health and safety hazard to construction workers if site rules are not properly implemented. This will have a short-term potential significant negative impact.

Proposed Mitigation Measures

The Proposed Development will be constructed, operated, and decommissioned in accordance with all relevant Health and Safety Legislation, including:

- Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);
- Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. No. 299 of 2007), as amended;
- Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. 291 of 2013), as amended; and
- Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006).

During construction of the Proposed Development, all staff will be made aware of and adhere to the Health & Safety Authority's 'Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006'. This will encompass the use of all necessary Personal Protective Equipment, Risk Assessment and Method Statements and adherence to the site Health and Safety Plan.

Fencing will be erected in areas of the site where uncontrolled access is not permitted. Appropriate health and safety signage will also be erected on this fencing and at locations around the site.

Health and Safety Guidelines for working within and around electrical substation and overhead lines will be adhered to onsite.

Residual Impact

With the implementation of the above mitigation measures, there will be a short-term potential slight negative residual impact on health and safety during the construction phase of the Proposed Development.

Significance of Effects

Based on the assessment above there will be no significant direct and indirect effects on health and safety during the construction phase of the Proposed Development.

5.7.2.2 Employment and Investment

The design, construction and operation of the Proposed Development will provide employment for technical consultants, contractors, and maintenance staff. Together with the Permitted Development, up to approximately 70 jobs could be created during the construction, operation, and maintenance phases of the Proposed Development. The entire construction phase of the Proposed Development and Permitted Development will last approximately 18 months. Most construction workers and materials will be sourced locally, thereby helping to sustain employment in the construction trade. This will have a short-term significant positive impact.

The injection of money in the form of salaries and wages to those employed during the construction phase of the project has the potential to result in an increase in household spending and demand for goods and services in the local area. This would result in local retailers and businesses experiencing a short-term positive impact on their cash flow. This will have a short-term slight positive indirect impact.

The Proposed Development will result in an influx of skilled people into the area, bringing specialist skills for both the construction and operational phases that could result in the transfer of these skills into the local workforce, thereby having a long-term positive impact on the local skills base. Up-skilling and training of local staff in the particular requirements of the wind energy industry is likely to lead to additional opportunities for those staff as additional wind farms are constructed in Ireland. This will have a long-term moderate positive indirect impact. According to the Wind Energy Ireland there are over 5,000 people working in the Irish onshore wind energy industry which is expected to rise to more than 7,000 by the end of 2022.

5.7.2.3 Population

Those working on the construction phase of the Proposed Development will travel daily to the site from the wider area. The construction phase will have no impact on the population of the area in terms of changes to population trends or density, household size or age structure.

5.7.2.4 Land-use

It is envisaged that the current land uses of commercial forestry, wind farm development, localised peat extraction and agriculture will continue on site in conjunction with the Proposed Development. The Proposed Development will have no impact on existing land-uses as it has been designed to co-exist with these land-uses. Whilst there will be a change of land use to facilitate the development of the infrastructure, this is an acceptable and unavoidable part of the Proposed Development.

5.7.2.5 Tourism and Amenity

Given that there are currently no tourism attractions specifically pertaining to the site there are no impacts associated with the construction phase of the Proposed Development.

5.7.2.6 Noise

Pre-Mitigation Impacts

There will be an increase in noise levels in the vicinity of the Proposed Development during the construction phase, as a result of heavy machinery and construction work which has the potential to cause a nuisance to sensitive receptors located closest the Proposed Development. These impacts will be short-term in duration.

Construction noise at any given noise sensitive location will be variable throughout the construction project, depending on the activities underway and the distance from the main construction activities to the receiving properties. The potential noise impacts that will occur during the construction phase of the Proposed Development are further described in Chapter 10: Noise and Vibration.

Proposed Mitigation Measures

Best practice measures for noise control will be adhered to onsite during the construction phase of the Proposed Development in order to mitigate the slight short-term negative impact associated with this phase of the development. These measures will include:

- Limiting the hours during which site activities likely to create high levels of noise or vibration are permitted.
- Establishing channels of communication between the contractor/developer, Local Authority and residents.
- Appointing a site representative responsible for matters relating to noise and vibration.
- Monitoring typical levels of noise and vibration during critical periods and at sensitive locations.
- Where necessary, no plant used on site will be permitted to cause an on-going public nuisance due to noise.
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations.
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.
- 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.
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use.
- Any plant, such as generators or pumps, which is required to operate outside of general construction hours will be surrounded by an acoustic enclosure or portable screen.
- During the course of the construction programme, supervision of the works will include ensuring compliance with the limits detailed in Chapter 10 using methods outlined in British Standard BS 5228-1:2014+A1:2019 Code of practice for noise and vibration control on construction and open sites – Noise.
- The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 7:00hrs and 19:00hrs Monday to Saturday. However, to ensure that optimal use is made of good

weather periods or at critical periods within the programme (i.e. concrete pours, large turbine component delivery, rotor/blade lifting) it could occasionally be necessary to work out of these hours.

Where rock breaking is employed in relation to the proposed borrow pit location, the borrow pit extension and other infrastructure excavations, the following are examples of measures that will be employed, where necessary, to mitigate noise emissions from these activities:

- Fit suitably designed muffler or sound reduction equipment to the rock breaking tool to reduce noise without impairing machine efficiency.
- Ensure all leaks in air lines are sealed.
- Use a dampened bit to eliminate ringing.
- Erect acoustic screen between compressor or generator and noise sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured.
- Enclose breaker or rock drill in portable or fixed acoustic enclosure with suitable ventilation.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible negative residual impact due to an increase in noise levels during the construction phase of the Proposed Development.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.7.2.7 Air (Dust)

Pre-Mitigation Impacts

Potential dust emission sources are possible during the construction phase of the Proposed Development. An increase in dust emissions has the potential to cause a nuisance to sensitive receptors in the immediate vicinity of the site. The entry and exit of construction vehicles from the site may result in the transfer of mud to the public road, particularly if the weather is wet. This may cause nuisance to residents and other road users. These impacts will not be significant and will be relatively short-term in duration. The potential dust impacts that may occur during the construction phase of the Proposed Development are further described in Chapter 9: Air and Climate.

Proposed Mitigation Measures

All aggregate material for the construction of roads, underground electrical cabling, and substation areas will be sourced onsite and will only be outsourced where necessary; therefore, reducing the need to transport this material to the site. Truck wheels will be washed to remove mud and dirt before leaving the site where necessary. A road sweeper will be available if any section of the public roads requires cleaning due to construction traffic associated with the Proposed Development. All plant and materials shall be stored in the dedicated compound area. Areas of excavation will be kept to a minimum, and stockpiling will be minimised by coordinating excavation, spreading and compaction. Construction traffic will be restricted to defined routes and a speed limit will be implemented.

In periods of extended dry weather, dust suppression may be necessary during the construction phase of the Proposed Development to ensure dust does not cause a nuisance. If necessary, water will be taken from the site's drainage system, and will be pumped into a bowser or water spreader to dampen down haul roads and the temporary site compound to prevent the generation of dust. Silty or oily water

will not be used for dust suppression, because this would transfer the pollutants to the haul roads and generate polluted runoff or more dust. Water bowser movements will be carefully monitored, as the application of too much water may lead to increased runoff.

Potential dust emissions during the construction period will not be significant and will be relatively short-term in duration.

Residual Impact

Following the implementation of the above mitigation measures, there will be a short-term imperceptible impact due to dust emissions from the construction of the Proposed Development.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.7.2.8 Traffic

Pre-Mitigation Impacts

The entire construction phase of the Proposed Development and Permitted Development will last for approximately 18 months. It is proposed to access the site of the Proposed Development via an existing access track off the remaining section of the old N22 alignment to the southwest of the site. This entrance will be widened to facilitate the delivery of the construction materials and turbine components. A temporary access road will also be required from the N22 to the old N22 alignment to facilitate delivery of the abnormally large wind turbine component vehicle loads.

Non-turbine construction traffic will be comprised of Heavy Goods Vehicle (HGV) and Light Goods Vehicle (LGV) movements involved in the delivery of construction materials to the site and the export of excess construction materials and plant from the site. A complete Traffic and Transportation Assessment (TTA) of the Proposed Development has been carried out by Alan Lipscombe Traffic and Transport Consultants. The full results of the TTA are presented in Section 14.1 of Chapter 13: Material Assets.

The site entrance was subject to Autotrack assessment to identify the turning area required, as described in Section 13.1 of the TTA. Appropriate sightlines will be established to the north and south of the proposed site entrance for the safe egress of traffic. The proposed works will result in a permanent upgrade of this current site access from the local road, which will also form the entrance to the Permitted Development during the operational phase.

Proposed Mitigation Measures

A Traffic Management Plan will be developed and implemented to ensure any impact is short term in duration and slight in significance during the construction of the Proposed Development. Prior to commencement of any works, the occupants of dwellings in the vicinity of the proposed works will be contacted and the scheduling of works will be made clear. A programme of deliveries will be submitted to Cork and Kerry County Councils in advance of deliveries of turbine components to site.

Aggregate materials for the construction phase will be obtained from an onsite borrow pit. This will significantly reduce the number of delivery vehicles required to access the site.

Once a traffic management plan is implemented for the construction phase of the Proposed Development, there will be a short-term imperceptible negative residual impact on local road users.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.7.3 Operational Phase

The effects set out below relate to the operational phase of the Proposed Development.

5.7.3.1 Health and Safety

Pre-Mitigation Impact

The operational phase of the Proposed Development poses little threat to the health and safety of the public.

As forementioned in Section 5.4.1 above, the extremely low frequency (ELF) electric and magnetic fields (EMF) associated with the operation of the proposed cables fully comply with the international guidelines for ELF-EMF set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), a formal advisory agency to the World Health Organisation, as well as the EU guidelines for human exposure to EMF. Accordingly, there will be no operational impact on properties (residential or other uses) as the ICNIRP guidelines will not be exceeded at any distances even directly above the cables.

The ESB document ‘EMF & You’ (ESB, 2017)⁶ provides further practical information on EMF.

The consensus from health and regulatory authorities is that extremely low frequency EMFs, typically associated with powerlines of this nature, do not present a health risk.

Proposed Mitigation Measures

Notwithstanding the above, the following mitigation measures will be implemented during the operation of the Proposed Development to ensure that the risks posed to staff, and landowners remain negligible throughout the operational phase.

Staff associated with the Proposed Development will conduct frequent visits, which will include inspections to establish whether any signs have been defaced, removed, or are becoming hidden by vegetation or foliage, with prompt action taken as necessary.

Signs will also be erected at suitable locations across the site as required for the ease and safety of operation of the development. These signs include:

- Buried cable route markers;
- “No access to Unauthorised Personnel” at appropriate locations;
- Speed limits signs at site entrance and junctions;
- “Warning these Premises are alarmed” at appropriate locations;

⁶ *EMF & You: Information about Electric & Magnetic Fields and the electricity network in Ireland* Available at: https://esb.ie/docs/default-source/default-document-library/emf-public-information_booklet_v9.pdf?sfvrsn=0.

- > “Danger HV” at appropriate locations;
- > “Warning – Keep clear of structures during electrical storms, high winds or ice conditions” at site entrance;
- > “No unauthorised vehicles beyond this point” at specific site entrances; and
- > Other operational signage required as per site-specific hazards.

An operational phase Health and Safety Plan will be developed to fully address identified Health and Safety issues associated with the operation of the site and providing for access for emergency services at all times.

Residual Impact

With the implementation of the above mitigation measures, there will be a long-term, imperceptible residual impact on health and safety during the operational life of the Proposed Development.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.7.3.2 Employment and Investment

The operational phase will present an opportunity for mechanical-electrical contractors and craftspeople to become involved with the maintenance and operation of the Permitted Development facilitated by the Proposed Development. On a long-term scale, the Proposed Development and Permitted Development will create approximately 3 jobs during the operational phase relating to the maintenance and control of the Proposed and Permitted Developments, having a long-term slight positive effect.

5.7.3.3 Population

The operational phase of the Proposed Development will have no impact on the population of the area with regards to changes to trends, population density, household size or age structure.

5.7.3.4 Noise

A detailed noise assessment has been carried out in Chapter 10, as part of this EIAR, which shows that the once operational, the Proposed Development will be capable of meeting all required guidelines in relation to noise thresholds.

5.7.3.5 Traffic

As detail in Chapter 13, Section 13.1.7.3, there will be no direct effects resulting from the Proposed Development during the operational phase.

5.7.3.6 Tourism

Pre-Mitigation Impacts

Given that there are currently no tourism attractions or amenity walkways located within the Proposed Development site there are no impacts associated with the operational phase of the Proposed Development. The Department of the Environment, Heritage and Local Government’s *Wind Energy Development Guidelines for Planning Authorities* 2006 state that “*the results of survey work indicate that tourism and wind energy can co-exist happily*”. It is not considered that the Proposed Development would have an adverse impact on tourism infrastructure in the vicinity.

5.7.3.7 Residential Amenity

Pre-Mitigation Impacts

Potential impacts on residential amenity during the operational phase of the Proposed Development could arise primarily due to noise, changes to visual amenity and potential impact of dust and traffic.

Noise

A detailed noise assessment has been carried out in Chapter 10, as part of this EIAR, which shows that once operational the Proposed Development will be capable of meeting all required guidelines in relation to noise thresholds.

Visual Amenity

The visual impact of the Proposed Development is addressed comprehensively in Chapter 12: Landscape and Visual. The location of the proposed 110kV substation has been strategically sited to screen it within localised topography and forestry which mitigates potential visual effects.

Dust

Once the Proposed Development is operational, there will be no activities that will give rise to dust emission.

Traffic

As detailed in Chapter 13, Section 13.1.7.3, There will be no direct effects resulting from the Proposed Development during the operational phase.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic, and visual amenity in this EIAR will be implemented in order to reduce, insofar as possible, impacts on residential amenity at properties located in the vicinity of the Proposed Development.

Residual Impact

With the implementation of the mitigation measures outlined in relation to noise and vibration, dust, traffic, and visual amenity, the Proposed Development will have an imperceptible impact on residential amenity.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects on residential amenity.

5.7.4 Decommissioning Phase

It is envisaged that the 110 kV which connects each turbine and solar array to the proposed onsite 110 kV substation will be removed from the 33 kV underground cable ducting. The cabling will be pulled from the cable duct using a mechanical winch. The cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary soil excavation and disturbance for an underground element that is not visible. Site roadways could be in use for purposes other than the

operation of the development by the time the decommissioning of the Permitted Development is to be considered, and therefore it may be more appropriate to leave the roads in situ for further use.

The transport route accommodation areas will be re-used during decommissioning. This includes the re-instatement and re-establishment of the temporary access road from the N22 to the old N22 alignment to facilitate the removal of abnormally large vehicle loads.

5.7.5 Cumulative Effects

For the assessment of cumulative impacts, any other existing, permitted or proposed developments (wind energy or otherwise) have been considered. The factors to be considered in relation to cumulative effects include population and human health, biodiversity, land, soil, water, air, climate, material assets, landscape, and cultural heritage as well as the interactions between these factors.

The potential cumulative impact of the Proposed Development and other relevant developments has been carried out with the purpose of identifying what influence the Proposed Development will have on the surrounding environment when considered cumulatively and in combination with relevant approved, proposed, and existing projects in the vicinity of the proposed site.

Further information on projects considered as part of the cumulative assessment are given in Chapter 2: Background to the Proposed Development. The impacts with the potential to have cumulative effects on human beings are discussed below and in more detail in the relevant chapters: noise (Chapter 10), landscape & visual impacts (Chapter 12) and traffic (Chapter 13).

5.7.5.1 Employment and Economic Activity

Developments considered as part of the cumulative project list that are proposed, permitted, or already existing contribute to short-term employment during the construction stages and provide the potential for long-term employment resulting from maintenance operations. This results in a long-term significant positive impact.

The commercial forestry activities on the site of the Proposed Development provides between 3-6 months of employment, either for harvesting or replanting per year. These activities can continue while the Proposed Development is under construction and operating, resulting in a long-term moderate positive cumulative impact.

5.7.5.2 Tourism and Amenity

There are no key identified tourist attractions pertaining specifically to the site of the Proposed Development itself.

It is not considered that the Proposed Development together with other projects in the area will cumulatively affect any tourism infrastructure in the wider area. As mentioned previously, wind farms and substations are an existing feature in the surrounding landscape, which will assist in the assimilation of the Proposed Development into this environment. It is on this basis that it can be concluded that there would be a long-term imperceptible cumulative impact from the Proposed Development and other developments in the area.

5.7.5.3 Traffic

The main potential for cumulative impacts for the Proposed Development is with the Permitted Development, which has been taken into account and presented within Chapter 13: Material Assets of this EIAR.

The development or activities that were considered to have potential cumulative impacts with the Proposed Development in terms of traffic impacts are set out within Chapter 13, Section 13.1.7.5. It was concluded that there are 2 permitted developments (Gneevs Wind Farm and Clydaghroe Wind Farm Extension) where the potential for cumulative impacts are slight.

5.7.5.4 Air (Dust)

As discussed in Section 5.7.2.7 above, the Proposed Development will result in a short term imperceptible impact on air quality during the construction phase. There will be an imperceptible effect on air quality during the operational phase of the Proposed Development.

During the construction phase of the Proposed Development, and the construction phase of other developments within proximity of the Proposed Development site that are yet to be constructed, there will be minor emissions from construction plant and machinery and potential dust emissions associated with the construction activities. However, once the mitigation proposals, as outlined in Section 9.2.4.2.1 and Section 9.2.4.2.2 of Chapter 9 are implemented during the construction phase of the Proposed Development, there will be no cumulative negative effect on air and climate.

The nature of the Permitted Development, which will be facilitated by the Proposed Development, alongside other wind farms within proximity of the Proposed Development, are such that, once operational, they will have a cumulative long-term, significant, positive effect on the air quality and climate.

5.7.5.5 Noise

The potential for noise impacts during the operational phase of the Proposed Development is assessed fully in Chapter 10: Noise.

The assessment concluded that there is no significant noise and vibration effects associated with the Proposed Development in combination with any other developments in the area. The predicted noise and vibration levels associated with the construction of the Proposed Development has considered the cumulative impacts of the construction of the Permitted Development. The predicted noise and vibration levels with the construction phase are predicted to be within the proposed criteria thresholds.

The assessment also concluded that there is no significant noise and vibration effect associated with the operational phase of the Proposed Development. There is no noise and vibration emission of significance anticipated from the operation of the underground electrical cabling. There is no potential for any cumulative impacts with the operation of the Permitted Development or any other permitted or proposed developments in the environment.

5.7.5.6 Health and Safety

The Proposed Development will have no impacts in terms of health and safety. All other proposed, permitted, or operational/existing developments (wind energy or otherwise) would be expected to follow all relevant Health and Safety Legislation. It is assumed also that all mitigation measures in relation to the other cumulative projects, as set out in Section 2.6 of Chapter 2: Background to the Proposed Development will also be implemented. It is on this basis that it can be concluded that there would be a long-term imperceptible cumulative impact on Health & Safety from the Proposed Development and other developments in the area.

5.7.5.7 Property Values

As noted in Section 5.5, given the site cabling is underground and the access roads and the proposed 110kV substation are screened by vegetation and topography, property values are not likely to be affected by the Proposed Development.

It is on this basis that it can be concluded that there would be no impacts on property values in the receiving environment from the Proposed Development either in isolation, or when assessed cumulatively with the developments set out in Section 2.6 of Chapter 2.

5.7.5.8 Services

The rate payments from the Permitted Development, Proposed Development and other projects in the area will contribute significant funds to Cork County Council and Kerry County Council, which will be redirected to the provision of public services within the Counties. In addition, the injection of money into local services through the establishment of community benefit funds is also expected to be a long-term positive cumulative impact. It can therefore be concluded that there is not likely to be a cumulative impact on services in the local area due to the Proposed Development.

5.7.5.9 Residential Amenity

Pre-Mitigation Impacts

In the extremely unlikely event that all permitted and proposed projects as described in the cumulative assessment in Chapter 2 are constructed at the same time, there is the potential for a resulting short term, significant, cumulative, negative impact to occur on residential amenity, in relation to noise and vibration, dust, traffic and visual amenity.

Proposed Mitigation Measures

All mitigation as outlined under noise and vibration, dust, traffic and visual amenity, and t in this EIAR will be implemented in order to reduce insofar as possible impacts on residential amenity at properties located in the vicinity of the Proposed Development works, including along the proposed turbine and construction materials haul route. It is assumed also that all mitigation measures in relation to the other cumulative projects will also be implemented.

Residual Impact

The Proposed Development will have a short-term, slight negative effect on residential amenity during construction works. During the operational phase, noise from the proposed and permitted projects will be limited to below guideline levels or as committed to by the developer, resulting in a long-term, imperceptible residual impact on residential amenity.

Significance of Effects

Based on the assessment above there will be no significant direct or indirect effects.

5.8 Summary

Following consideration of the residual impacts (post-mitigation) it is noted that the Proposed Development will not result in any significant effects on Human Beings in the area surrounding the Proposed Development.

Provided that the Proposed Development is constructed and operated in accordance with the design, best practice and mitigation that is described within this EIAR significant effects on population and human health, associated with health and safety, noise, dust, and traffic, are not anticipated at international, national or county scale.